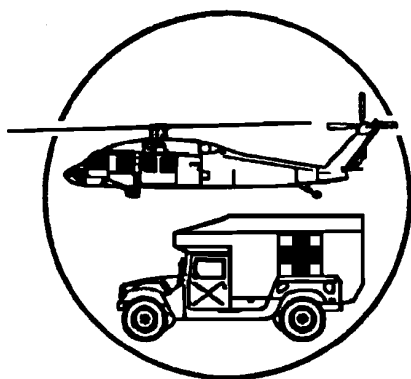


**STP 8-91B15-SM-TG**

# **SOLDIER'S MANUAL AND TRAINER'S GUIDE**



**MOS 91B  
MEDICAL  
SPECIALIST**  
SKILL LEVELS 1/2/3/4/5



**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.**

**SOLDIER TRAINING PUBLICATION  
No. 8-91B15-SM-TG**

**HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, DC, 3 October 1995**

**SOLDIER'S MANUAL  
SKILL LEVELS 1/2/3/5  
AND TRAINER'S GUIDE**

**MOS 91B  
MEDICAL SPECIALIST**

**TABLE OF CONTENTS**

	<i>Page</i>
<b>PREFACE</b>	vi
<b>CHAPTER 1. INTRODUCTION</b>	1-1
<b>CHAPTER 2. TRAINER'S GUIDE (TG)</b>	2-1
<b>CHAPTER 3. MOS SKILL LEVEL TASKS</b>	
Section I. Skill Level 1 Tasks	
Subject Area 1: Contamination Control	
081-831-0007 Perform a Patient Care Handwash	3-1
081-831-0008 Put On Sterile Gloves	3-4
081-831-0037 Disinfect Water for Drinking	3-8
Subject Area 2: Vital Signs	
081-831-0013 Measure a Patient's Temperature	3-10
081-831-0011 Measure a Patient's Pulse	3-14
081-831-0010 Measure a Patient's Respirations	3-17
081-831-0012 Measure a Patient's Blood Pressure	3-20

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\*This publication supersedes STP 8-91B15-SM-TG, 13 July 1992.

## STP 8-91B15-SM-TG

### Subject Area 3: Emergency Medical Treatment

081-831-0018	Open the Airway	3-24
081-831-0019	Clear an Upper Airway Obstruction	3-27
081-831-0048	Perform Rescue Breathing	3-32
081-831-0046	Administer External Chest Compressions	3-35
081-831-0043	Immobilize a Suspected Dislocated and/or Fractured Ankle Using a Wire Ladder Splint	3-40
081-831-0044	Apply a Pneumatic Splint to a Casualty with a Suspected Fracture of an Extremity	3-44

### Subject Area 4: General Medical

081-831-0033	Initiate a Field Medical Card	3-47
081-831-0035	Manage a Convulsive and/or Seizing Patient	3-50
081-831-0038	Treat a Casualty for a Heat Injury	3-54
081-831-0039	Treat a Casualty for a Cold Injury	3-58

### Subject Area 5: Basic Nursing Services

081-833-0076	Apply Restraining Devices to Patients	3-64
081-833-0006	Measure a Patient's Intake and Output	3-69
081-833-0007	Establish a Sterile Field	3-73
081-833-0010	Change a Sterile Dressing	3-76
081-833-0012	Perform a Wound Irrigation	3-82
081-833-0021	Perform Oral and Nasotracheal Suctioning of a Patient	3-86
081-833-0023	Prepare an Area for Operative Treatment	3-92
081-833-0059	Irrigate an Obstructed Ear	3-96

### Subject Area 6: Respiratory Dysfunction

081-833-0016	Insert an Oropharyngeal Airway (J Tube)	3-101
081-833-0017	Ventilate a Patient with a Bag-Valve-Mask System	3-104
081-830-3000	Prepare a Medical Gas Cylinder for Patient Use	3-108
081-833-0019	Administer Oxygen Therapy Using a Face Mask or Nasal Prongs	3-118

### Subject Area 7: Venipuncture and IV Therapy

081-833-0032	Obtain a Blood Specimen Using a Vacutainer	3-122
081-833-0033	Initiate an Intravenous Infusion	3-130
081-833-0034	Manage a Patient with an Intravenous Infusion	3-139
081-833-0088	Prepare an Injection for Administration	3-147
081-833-0089	Administer an Injection (Intramuscular, Subcutaneous, Intradermal)	3-154

## Subject Area 8: Casualty Management

081-833-0015	Survey a Casualty	3-161
081-833-0045	Treat a Casualty with an Open Abdominal Wound	3-169
081-833-0046	Apply a Dressing to an Impalement Injury	3-172
081-833-0049	Treat a Casualty with a Closed Chest Wound	3-175
081-833-0050	Treat a Casualty with an Open Chest Wound	3-181
081-833-0052	Treat a Casualty with an Open or Closed Head Injury	3-185
081-833-0070	Administer Initial Treatment for Burns	3-191
081-833-3026	Stabilize a Casualty with Inhalation Burns	3-199
081-833-0048	Manage an Unconscious Casualty	3-202
081-833-0103	Provide Care for a Soldier with Symptoms of Battle Fatigue	3-206

## Subject Area 9: Eye Injuries

081-833-0054	Irrigate Eyes	3-211
081-833-0056	Treat Foreign Bodies of the Eye	3-214
081-833-0057	Treat Lacerations, Contusions, and Extrusions of the Eye	3-218
081-833-0058	Treat Burns of the Eye	3-222

## Subject Area 10: Skeletal Dysfunction

081-833-0060	Apply a Roller Bandage	3-225
081-833-0061	Apply Arm Slings	3-231
081-833-0062	Immobilize a Suspected Fracture of the Arm or Dislocated Shoulder	3-238
081-833-0064	Immobilize a Suspected Dislocated or Fractured Hip	3-242
081-833-0091	Immobilize a Suspected Fractured Femur Using the Hare Traction Splint	3-248
081-833-0092	Transport a Casualty with a Suspected Spinal Injury	3-256

## Subject Area 11: Environmental Injuries

081-833-0072	Treat a Casualty for Insect Bites or Stings	3-263
081-833-0073	Treat a Casualty for Snakebite	3-271
081-833-0031	Initiate Treatment for Anaphylactic Shock	3-276

## Subject Area 12: Chemical Agent Injuries

081-833-0083	Treat a Nerve Agent Casualty in The Field	3-280
081-833-0084	Treat a Blood Agent (Hydrogen Cyanide) Casualty in the Field	3-285
081-833-0085	Treat a Choking Agent Casualty in the Field	3-287
081-833-0086	Treat a Blister Agent Casualty (Mustard, Lewisite, Phosgene Oxime) in the Field	3-290
081-833-0093	Set Up a Casualty Decontamination Station	3-294

## STP 8-91B15-SM-TG

081-833-0094	Route a Casualty Through a Decontamination Station	3-299
081-833-0095	Decontaminate a Casualty	3-303

### Subject Area 13: Shock and Anti-Shock Garment

081-833-0047	Initiate Treatment for Hypovolemic Shock	3-314
081-833-3011	Apply Pneumatic Anti-Shock Garment	3-317
081-833-3012	Deflate Pneumatic Anti-Shock Garment	3-323
081-833-3013	Maintain Pneumatic Anti-Shock Garment	3-326

### Subject Area 14: Urinary Catheterization

081-833-3025	Prepare for Urinary Catheterization	3-329
081-833-3017	Insert a Urinary Catheter	3-332

### Subject Area 15: Nasogastric Intubation

081-833-3024	Prepare for Nasogastric Intubation	3-337
081-833-3022	Insert a Nasogastric Tube	3-339
081-833-3023	Remove a Nasogastric Tube	3-342

### Subject Area 16: Triage and Evacuation

081-833-0080	Triage Casualties on a Conventional Battlefield	3-344
081-833-0082	Triage Casualties on an Integrated Battlefield	3-349
071-334-4002	Establish a Helicopter Landing Point	3-352
071-334-4001	Guide a Helicopter to Landing Point	3-356

## Section II. Skill Level 2 Tasks

### Subject Area 17: Respiratory and Cardiac Treatment

081-830-3015	Prepare Intubation Equipment	3-362
081-830-3016	Intubate a Patient	3-366
081-830-3014	Extubate a Patient	3-375
081-833-3006	Perform a Needle Cricothyroidotomy	3-379
081-833-3005	Perform a Surgical Cricothyroidotomy	3-382
081-833-3007	Perform Needle Chest Decompression	3-386
081-833-3010	Insert an Esophageal Gastric Tube Airway (EGTA) / Esophageal Obturator Airway (EOA)	3-390
081-833-3027	Manage Cardiac Arrest	3-395

Subject Area 18: Medications

081-835-3001	Administer Oral Medications	3-398
081-835-3020	Administer Topical Medications	3-402
081-835-3021	Administer Rectal or Vaginal Medications	3-406
081-835-3022	Administer Medicated Eye Drops or Ointments	3-411

Subject Area 19: General Subjects

081-833-3014	Perform a Neurological Examination on a Patient with Suspected Central Nervous System (CNS) Injuries	3-416
081-835-3030	Determine a Patient's Level of Consciousness Using the Glasgow Coma Scale	3-423

<b>APPENDIX A Drug Dosage Calculations</b>	<b>A-1</b>
--	------------

<b>GLOSSARY</b>	<b>GLOSSARY-1</b>
-----------------	-------------------

<b>REFERENCES</b>	<b>REFERENCES-1</b>
-------------------	---------------------

## **PREFACE**

This publication is for skill level 1, 2, 3, 4, and 5 soldiers holding military occupational specialty (MOS) 91B and for trainers and first-line supervisors. It contains standardized training objectives, in the form of task summaries, to train and evaluate soldiers on critical tasks which support unit missions during wartime. Trainers and first-line supervisors should ensure soldiers holding MOS/SL 91B1/2/3/4/5 have access to this publication. It should be made available in the soldier's work area, unit learning center, and unit libraries.

This manual applies to both Active and Reserve Component soldiers.

The proponent of this publication is HQ, TRADOC. Send comments and recommendations on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Academy of Health Sciences, ATTN: MCCS-HTI (TLS), 1750 Greeley Road, STE 123, Fort Sam Houston, TX 78234-6122.

## **CHAPTER 1**

### **INTRODUCTION**

#### **GENERAL**

This manual identifies the individual MOS training requirements for soldiers in MOS 91B. Commanders, trainers, and soldiers should use it to plan, conduct, and evaluate individual training in units. This manual is the primary MOS reference to support the self-development and training of every soldier.

Use this manual with Soldier's Manuals of Common Tasks (STP 21-1-SMCT and STP 21-24-SMCT), Army Training and Evaluation Programs (ARTEPs), and FM 25-101, Battle Focused Training, to establish effective training plans and programs which integrate soldier, leader, and collective tasks.

#### **SOLDIER'S RESPONSIBILITIES**

Each soldier is responsible for performing individual tasks which the first-line supervisor identifies based on the unit's METL. The soldier must perform the tasks to the standards listed in the SM. If a soldier has a question about how to do a task or which tasks in this manual he or she must perform, it is the soldier's responsibility to ask the first-line supervisor for clarification. The first-line supervisor knows how to perform each task or can direct the soldier to the appropriate training materials.

#### **NCO SELF-DEVELOPMENT AND THE SOLDIER'S MANUAL**

Self-development is one of the key components of the leader development program. It is a planned progressive and sequential program followed by leaders to enhance and sustain their military competencies.

It consists of individual study, research, professional reading, practice, and self-assessment. Under the self-development concept, the NCO, as an Army professional, has the responsibility to remain current in all phases of the MOS. The SM is the primary source for the NCO to use in maintaining MOS proficiency.

Another important resource for NCO self-development is the Army Correspondence Course Program (ACCP). Refer to DA Pamphlet 351-20 for information on enrolling in this program and for a list of courses, or write to: Commandant, Academy of Health Sciences, ATTN: MCCS-HSN, Fort Sam Houston, TX 78234-6199.

Unit learning centers are valuable resources for planning self-development programs. They can help access enlisted career maps, training support products, and extension training materials.



## **TRAINING SUPPORT**

This manual includes the following information which provides additional training support information.

- **Glossary.** The glossary, which follows the last appendix, is a single comprehensive list of acronyms, abbreviations, definitions, and letter symbols.
- **References.** This section contains two lists of references, required and related, which support training of all tasks in this SM. Required references are listed in the conditions statement and are required for the soldier to do the task. Related references are materials which provide more detailed information and a more thorough explanation of task performance.

## CHAPTER 2

### TRAINER'S GUIDE (TG)

#### GENERAL

The TG identifies the essential components of a unit training plan for individual training. Units have different training needs and requirements based on differences in environment, location, equipment, dispersion, and similar factors. Therefore, the TG is a guide used for conducting unit training and not as a rigid standard.

The TG provides information necessary for planning training requirements for the MOS. The TG--

- Identifies subject areas in which to train soldiers.
- Identifies the critical tasks for each subject area.
- Specifies where soldiers are trained to standard on each task.
- Recommends how often to train each task to sustain proficiency.
- Recommends a strategy for cross-training soldiers.
- Recommends a strategy for training soldiers to perform higher level tasks.

#### BATTLE FOCUSED TRAINING

As described in FM 25-100, Training the Force, and FM 25-101, Battle Focused Training, the commander must first define the mission essential task list (METL) as the basis for unit training. Unit leaders use the METL to identify the collective, leader, and soldier tasks which support accomplishment of the METL. Unit leaders then assess the status of training and lay out the training objectives and the plan for accomplishing needed training. After preparing the long- and short-range plans, leaders then execute and evaluate training. Finally, the unit's training preparedness is reassessed, and the training management cycle begins again. This process ensures that the unit has identified what is important for the wartime mission, that the training focus is applied to the necessary training, and that training meets established objectives and standards.

#### RELATIONSHIP OF SOLDIER TRAINING PUBLICATIONS (STPs) TO BATTLE- FOCUSED TRAINING

The two key components of enlisted STPs are the Trainer's Guide (TG) and Soldier's Manual (SM). The TG and SM give leaders important information to help in the battle-focused training process. The TG relates soldier and leader tasks in the MOS and SL to duty positions and equipment. It provides information on where the task is trained, how often training should occur to sustain proficiency, and who in

## **STP 8-91B15-SM-TG**

the unit should be trained. As leaders go through the assessment and planning stages, they should use the TG as an important tool in identifying *what* needs to be trained.

The execution and evaluation of soldier and leader training should rely on the Armywide training objectives and standards in the SM task summaries. The task summaries ensure that soldiers in any unit or location have the same definition of task performance and that trainers evaluate the soldiers to the same standard. The diagram on the following page shows the relationship between battle-focused training and the use of the TG and SM. The left-hand side of the diagram (taken from FM 25-101) shows the soldier training process while the right side of the diagram shows how the STP supports each step of this process.

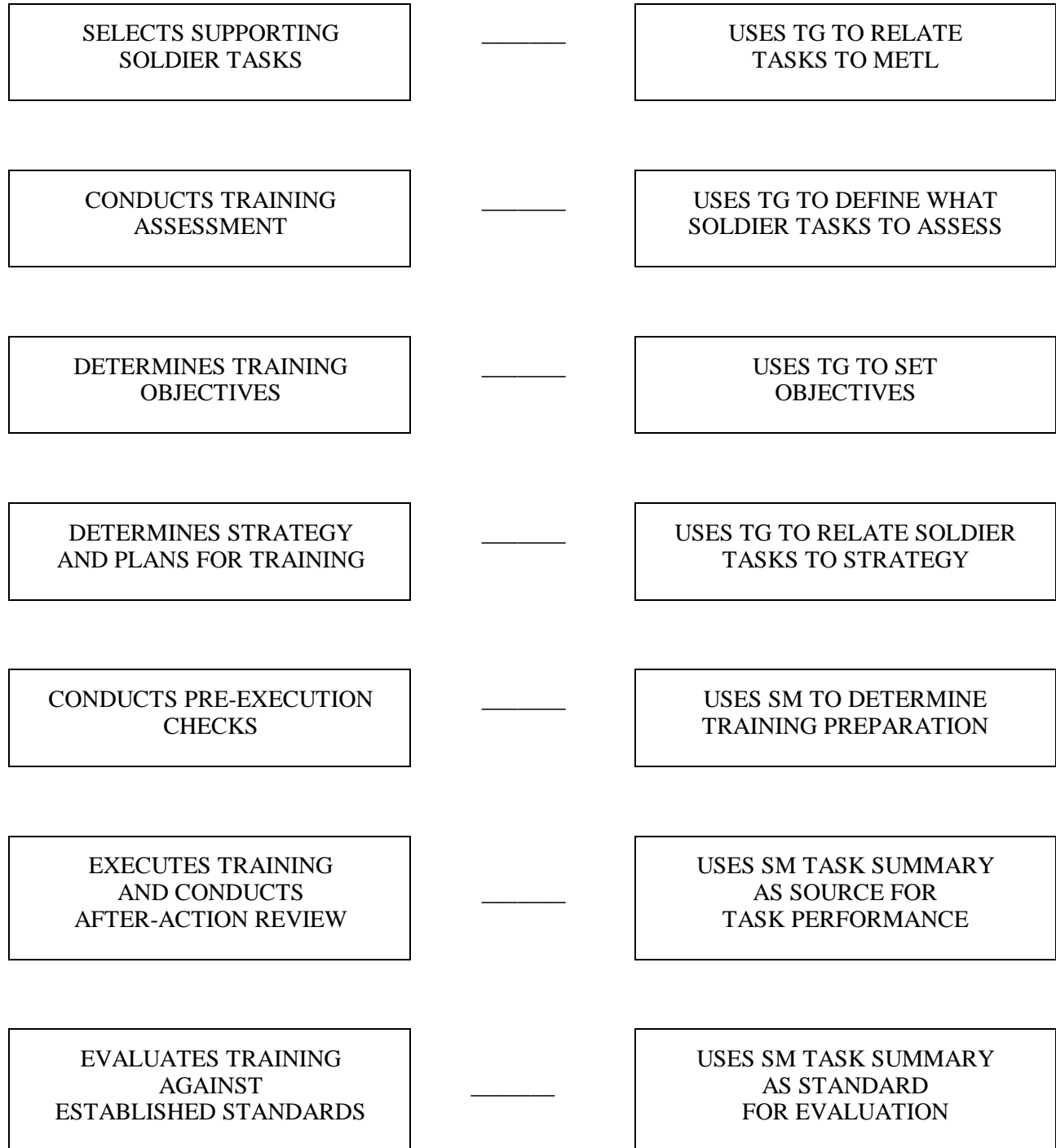
### **TRAINER'S RESPONSIBILITIES**

Training soldier and leader tasks to standard and relating this training to collective mission-essential tasks is the NCO trainer's responsibility. Trainers use the steps below to plan and evaluate training.

- Identify soldier and leader training requirements. The NCO determines which tasks soldiers need to train on using the commander's training strategy. The unit's METL and ARTEP and the MOS Training Plan (MTP) in the TG are sources for helping the trainer define the individual training needed.
- Plan the training. Training for specific tasks can usually be integrated or conducted concurrently with other training or during "slack periods." The unit's ARTEP can assist in identifying soldier and leader tasks which can be trained and evaluated concurrently with collective task training and evaluation.
- Gather the training references and materials. The SM task summary lists all references which can assist the trainer in preparing for the training of that task.
- Determine risk assessment and identify safety concerns. Analyze the risk involved in training a specific task under the current conditions at the time of scheduled training. Ensure that your training preparation takes into account those cautions, warnings, and dangers associated with each task.
- Train each soldier. Show the soldier how the task is done to standard, and explain step-by-step how to do the task. Give each soldier one chance to do the task step-by-step.
- Emphasize training in mission-oriented protective posture (MOPP) level 4 clothing. Soldiers have difficulty performing even the very simple tasks in a nuclear/chemical environment. The combat effectiveness of the soldier and the unit can degrade quickly when trying to perform in MOPP 4. Practice is the best way to improve performance. The trainer is responsible for training and evaluating soldiers in MOPP 4 so that they are able to perform critical wartime tasks to standards under nuclear/chemical environment.
- Check each soldier. Evaluate how well each soldier performs the tasks in this manual. Conduct these evaluations during individual training sessions or while evaluating soldier proficiency during the conduct of unit collective tasks. This manual provides an evaluation guide for each task to enhance the trainer's ability to conduct year-round, hands-on evaluations of tasks critical to the unit's mission. Use the

**BATTLE-FOCUS PROCESS**

**STP SUPPORT PROCESS**



## **STP 8-91B15-SM-TG**

information in the MTP as a guide to determine how often to train the soldier on each task to ensure that soldiers sustain proficiency.

- Record the results. The leader book referred to in FM 25-101, appendix B, is used to record task performance and gives the leader total flexibility on the method of recording training. The trainer may use DA Forms 5164-R (Hands-On Evaluation) and 5165-R (Field Expedient Squad Book) as part of the leader book. The forms are optional and locally reproducible. STP 21-24-SMCT contains a copy of the forms and instructions for their use.

- Retrain and evaluate. Work with each soldier until he or she can perform the task to specific SM standards.

### **EVALUATION GUIDE**

An evaluation guide exists for each task summary in the SM. Trainers use the evaluation guides year-round to determine if soldiers can perform their critical tasks to SM standards. Each evaluation guide contains one or more performance measures which identify what the trainer needs to observe to score a soldier's performance. Each step is clearly identified by a "P" (Pass) and "F" (Fail), located under the "Results" column on each evaluation guide. Some tasks involve a process which the trainer must observe as the soldier performs the task. For other tasks, the trainer must evaluate an "end product" resulting from doing the task. The following are some general points about using the evaluation guide to evaluate soldiers:

- Review the guide to become familiar with the information on which the soldier will be scored.
- Ensure that the necessary safety equipment and clothing needed for proper performance of the job are on hand at the training site.
- Prepare the test site according to the conditions section of the task summary. Some tasks contain special evaluation preparation instructions. These instructions tell the trainer what modifications must be made to the job conditions to evaluate the task. Reestablish the test site to the original requirements after evaluating each soldier to ensure that conditions are the same for each soldier.
- Advise each soldier of the information in the Brief Soldier section of the task summary before evaluating.
- Score each soldier according to the performance measures in the evaluation guide. Unless otherwise stated in the task summary, the soldier must pass all performance measures to be scored GO. If the soldier fails any steps, show what was done wrong and how to do it correctly.
- Record the date and task performance ("GO" or "NO-GO") in the leader book.

## TRAINING TIPS FOR THE TRAINER

### 1. Prepare yourself.

- Get training guidance from your chain of command on when to train, which soldiers to train, availability of resources, and a training site.

- Get the training objective (task, conditions, and standards) from the task summary in this manual.

- Ensure you can do the task. Review the task summary and the references in the reference section. Practice doing the task or, if necessary, have someone train you on the task.

- Choose a training method.

- Prepare a training outline consisting of informal notes on what you want to cover during your training session.

- Practice your training presentation.

### 2. Prepare the resources.

- Obtain the required resources identified in the conditions statement for each task.

- Gather equipment and ensure it is operational.

- Coordinate for use of training aids and devices.

- Prepare the training site according to the conditions statement and evaluation preparation section of the task summary, as appropriate.

### 3. Prepare the soldiers.

- Tell the soldier what task to do and how well it must be done. Refer to the standards statement and evaluation preparation section for each task as appropriate.

- Caution soldiers about safety, environment, and security.

- Provide any necessary training on basic skills that soldiers must have before they can be trained on the task.

- Pretest each soldier to determine who needs training in what areas by having the soldier perform the task. Use DA Form 5164-R and the evaluation guide in each task summary to make this determination.

### 4. Train the soldiers who failed the pretest.

## **STP 8-91B15-SM-TG**

- Demonstrate how to do the task or the specific performance steps to those soldiers who could not perform to SM standards. Have soldiers study the appropriate materials.
  - Have soldiers practice the task until they can perform it to SM standards.
  - Evaluate each soldier using the evaluation guide.
  - Provide feedback to those soldiers who fail to perform to SM standards and have them continue to practice until they can perform to SM standards.
5. Record results in the leader book.

### **MILITARY OCCUPATIONAL SPECIALTY TRAINING PLAN**

One of the key components of the TG is the MOS Training Plan (MTP). The MTP has two parts to assist the commander in preparing a unit training plan which satisfies integration, cross-train, train-up, and sustainment training requirements for soldiers in this MOS.

#### **PART ONE**

Part one of the MTP shows the relationship of an MOS SL between duty position and critical tasks. The critical tasks are grouped by task commonality into subject areas. Section I lists subject area numbers and titles used throughout the MTP. Section II defines the training requirements for each duty position within an MOS and relates duty positions to subject areas and cross-training and train-up/merger requirements.

- Duty position column--contains the MOS duty positions, by skill level, which have different training requirements.
- Subject area column--lists by subject area number, the subject areas in which the soldier must be proficient for that duty position.
- Cross-train column--lists the recommended duty position for which soldiers should be cross-trained.
- Train-up/merger column--lists the corresponding duty position for the next higher SL or MOS the soldier will merge into on promotion.

#### **PART TWO**

Part two lists by subject areas, the critical tasks to be trained in an MOS, task number, task title, location, sustainment training frequency, and training SL.

- Subject area column--lists the subject area number and title in the same order as in the MTP, Part One, Section I.
- Task number column--lists the task numbers for all tasks included in the subject area.

- Task title column--lists the task title.
- Training location column--identifies the training location where the task is first trained to STP standards. If the task is first trained to standard in the unit, the word "UNIT" will be in this column. If the task is first trained to standard in the training base, it will identify the resident course where the task was taught.

Figure 2-1 contains a list of training locations and their brevity codes.

AIT	-	Advanced Individual Training
ANC	-	Advanced Noncommissioned Officer's Course
BCT	-	Basic Combat Training
BNC	-	Basic Noncommissioned Officer's Course
OSUT	-	One Station Unit Training
PLDC	-	Primary Leadership Development Course
SMC	-	Sergeants Major Course
UNIT	-	Trained in the Unit

**Figure 2-1. Training locations**

- Sustainment training frequency column--indicates the recommended frequency at which tasks should be trained to ensure the soldier maintains task proficiency. Figure 2-2 identifies the frequency codes to use in this column.

AN	-	annually
BM	-	bimonthly (once every two months)
MO	-	monthly
QT	-	quarterly
SA	-	semiannually

**Figure 2-2. Sustainment training frequency codes**

- Sustainment training SL column--lists the SLs of the MOS for which soldiers must receive sustainment training to ensure they maintain proficiency to SM standards.
- A chart at the end of the MTP indicates the ARTEPs which the individual critical tasks support. This establishes the crosswalk between individual and collective training.



**MOS TRAINING PLAN**

**MOS 91B**

**PART I. SUBJECT AREAS AND DUTY POSITIONS**

**SECTION 1. SUBJECT AREA CODES**

- |                                |                                       |
|--------------------------------|---------------------------------------|
| 1. Contamination Control       | 11. Environmental Injuries            |
| 2. Vital Signs                 | 12. Chemical Agent Injuries           |
| 3. Emergency Medical Treatment | 13. Shock and Anti-Shock Garment      |
| 4. General Medical             | 14. Urinary Catheterization           |
| 5. Basic Nursing Services      | 15. Nasogastric Intubation            |
| 6. Respiratory Dysfunction     | 16. Triage and Evacuation             |
| 7. Venipuncture and IV Therapy | 17. Respiratory and Cardiac Treatment |
| 8. Casualty Management         | 18. Medications                       |
| 9. Eye Injuries                | 19. General Subjects                  |
| 10. Skeletal Dysfunction       |                                       |

**PART I. SUBJECT AREAS AND DUTY POSITIONS****SECTION 2. DUTY POSITION TRAINING REQUIREMENTS**

<b>DUTY POSITION</b>		<b>SUBJECT AREAS</b>	<b>CROSS TRAIN</b>	<b>TRAIN-UP/ MERGER</b>
SL 1	Medical Specialist	1-16	NA	91B2 Medical Specialist
SL 2	Medical Specialist	1-19	NA	NA
SL 3	Medical Specialist	1-19	NA	NA
SL 4	Medical Specialist	1-19	NA	NA
SL 5	Medical Specialist	1-19	NA	NA

**STP 8-91B15-SM-TG**

Part II CRITICAL TASKS			MOS 91B		Skill Level 1	
Subject Area	Task Number	Title	Training Location	Sust Tng Freq	Sust Tng SL	
1. Contamination Control	081-831-0007	Perform A Patient Care Handwash	AIT	SA	1-5	
	081-831-0008	Put On Sterile Gloves	AIT	SA	1-5	
	081-831-0037	Disinfect Water For Drinking	AIT	AN	1-5	
2. Vital Signs	081-831-0013	Measure A Patient's Temperature	AIT	AN	1-5	
	081-831-0011	Measure A Patient's Pulse	AIT	AN	1-5	
	081-831-0010	Measure A Patient's Respirations	AIT	AN	1-5	
	081-831-0012	Measure A Patient's Blood Pressure	AIT	AN	1-5	
3. Emergency Medical Treatment	081-831-0018	Open The Airway	AIT	AN	1-5	
	081-831-0019	Clear An Upper Airway Obstruction	AIT	AN	1-5	
	081-831-0048	Perform Rescue Breathing	AIT	SA	1-5	
	081-831-0046	Administer External Chest Compressions	AIT	SA	1-5	
	081-831-0043	Immobilize A Suspected Dislocated And/or Fractured Ankle Using A Wire Ladder Splint	AIT	AN	1-5	
	081-831-0044	Apply A Pneumatic Splint To A Casualty With A Suspected Fracture Of An Extremity	AIT	AN	1-5	
4. General Medical	081-831-0033	Initiate A Field Medical Card	AIT	AN	1-5	
	081-831-0035	Manage A Convulsive And/or Seizing Patient	AIT	AN	1-5	
	081-831-0038	Treat A Casualty For A Heat Injury	AIT	AN	1-5	
	081-831-0039	Treat A Casualty For A Cold Injury	AIT	AN	1-5	
5. Basic Nursing Services	081-833-0076	Apply Restraining Devices To Patients	AIT	SA	1-5	
	081-833-0006	Measure A Patient's Intake And Output	AIT	AN	1-5	
	081-833-0007	Establish A Sterile Field	AIT	AN	1-5	
	081-833-0010	Change A Sterile Dressing	AIT	AN	1-5	
	081-833-0012	Perform A Wound Irrigation	AIT	AN	1-5	
	081-833-0021	Perform Oral And Nasotracheal Suctioning Of A Patient	AIT	AN	1-5	
	081-833-0023	Prepare An Area For Operative Treatment	AIT	AN	1-5	
	081-833-0059	Irrigate An Obstructed Ear	AIT	AN	1-5	
6. Respiratory Dysfunction	081-833-0016	Insert An Oropharyngeal Airway (J Tube)	AIT	AN	1-5	
	081-833-0017	Ventilate A Patient With A Bag-Valve-Mask System	AIT	AN	1-5	
	081-830-3000	Prepare A Medical Gas Cylinder For Patient Use	AIT	AN	1-5	
	081-833-0019	Administer Oxygen Therapy Using A Face Mask Or Nasal Prongs	AIT	AN	1-5	
7. Venipuncture and IV	081-833-0032	Obtain A Blood Specimen Using A Vacutainer	AIT	AN	1-5	
	081-833-0033	Initiate An Intravenous Infusion	AIT	AN	1-5	

Subject Area	Task Number	Title	Training Location	Sust Tng Freq	Sust Tng SL
Therapy	081-833-0034	Manage A Patient With An Intravenous Infusion	AIT	AN	1-5
	081-833-0088	Prepare An Injection For Administration	AIT	AN	1-5
	081-833-0089	Administer An Injection (Intramuscular, Subcutaneous, Intradermal)	AIT	AN	1-5
8. Casualty Management	081-833-0015	Survey A Casualty	AIT	AN	1-5
	081-833-0045	Treat A Casualty With An Open Abdominal Wound	AIT	AN	1-5
	081-833-0046	Apply A Dressing To An Impalement Injury	AIT	AN	1-5
	081-833-0049	Treat A Casualty With A Closed Chest Wound	AIT	AN	1-5
	081-833-0050	Treat A Casualty With An Open Chest Wound	AIT	AN	1-5
	081-833-0052	Treat A Casualty With An Open Or Closed Head Injury	AIT	AN	1-5
	081-833-0070	Administer Initial Treatment For Burns	AIT	AN	1-5
	081-833-3026	Stabilize A Casualty With Inhalation Burns	AIT	AN	1-5
	081-833-0048	Manage An Unconscious Casualty	AIT	AN	1-5
	081-833-0103	Provide Care For A Soldier With Symptoms Of Battle Fatigue	AIT	SA	1-5
9. Eye Injuries	081-833-0054	Irrigate Eyes	AIT	AN	1-5
	081-833-0056	Treat Foreign Bodies Of The Eye	AIT	AN	1-5
	081-833-0057	Treat Lacerations, Contusions, And Extrusions Of The Eye	AIT	AN	1-5
	081-833-0058	Treat Burns Of The Eye	AIT	AN	1-5
10. Skeletal Dysfunction	081-833-0060	Apply A Roller Bandage	AIT	AN	1-5
	081-833-0061	Apply Arm Slings	AIT	AN	1-5
	081-833-0062	Immobilize A Suspected Fracture Of The Arm Or Dislocated Shoulder	AIT	AN	1-5
	081-833-0064	Immobilize A Suspected Dislocated Or Fractured Hip	AIT	AN	1-5
	081-833-0091	Immobilize A Suspected Fractured Femur Using The Hare Traction Splint	AIT	AN	1-5
	081-833-0092	Transport A Casualty With A Suspected Spinal Injury	AIT	AN	1-5
11. Environmental Injuries	081-833-0072	Treat A Casualty For Insect Bites Or Stings	AIT	AN	1-5
	081-833-0073	Treat A Casualty For Snakebite	AIT	AN	1-5
	081-833-0031	Initiate Treatment For Anaphylactic Shock	AIT	AN	1-5
12. Chemical Agent Injuries	081-833-0083	Treat A Nerve Agent Casualty In The Field	AIT	AN	1-5
	081-833-0084	Treat A Blood Agent (Hydrogen Cyanide) Casualty In The Field	AIT	AN	1-5

**STP 8-91B15-SM-TG**

<b>Subject Area</b>	<b>Task Number</b>	<b>Title</b>	<b>Training Location</b>	<b>Sust Tng Freq</b>	<b>Sust Tng SL</b>
	081-833-0085	Treat A Choking Agent Casualty In The Field	AIT	AN	1-5
	081-833-0086	Treat A Blister Agent Casualty (Mustard, Lewisite, Phosgene Oxime) In The Field	AIT	AN	1-5
	081-833-0093	Set Up A Casualty Decontamination Station	AIT	AN	1-5
	081-833-0094	Route A Casualty Through A Decontamination Station	AIT	AN	1-5
	081-833-0095	Decontaminate A Casualty	AIT	AN	1-5
13. Shock and Anti-Shock Garment	081-833-0047	Initiate Treatment For Hypovolemic Shock	AIT	AN	1-5
	081-833-3011	Apply Pneumatic Anti-Shock Garment	AIT	AN	1-5
	081-833-3012	Deflate Pneumatic Anti-Shock Garment	AIT	AN	1-5
	081-833-3013	Maintain Pneumatic Anti-Shock Garment	AIT	AN	1-5
14. Urinary - Catheterization	081-833-3025	Prepare For Urinary Catheterization	AIT	AN	1-5
	081-833-3017	Insert A Urinary Catheter	AIT	AN	1-5
15. Nasogas- tric Intubation	081-833-3024	Prepare For Nasogastric Intubation	AIT	AN	1-5
	081-833-3022	Insert A Nasogastric Tube	AIT	AN	1-5
	081-833-3023	Remove A Nasogastric Tube	AIT	AN	1-5
16. Triage and Evacuation	081-833-0080	Triage Casualties On A Conventional Battlefield	AIT	AN	1-5
	081-833-0082	Triage Casualties On An Integrated Battlefield	AIT	AN	1-5
	071-334-4002	Establish A Helicopter Landing Point	AIT	AN	1-5
	071-334-4001	Guide A Helicopter To Landing Point	AIT	AN	1-5

Part II CRITICAL TASKS		MOS 91B	Skill Level 2		
17. Respiratory and Cardiac Treatment	081-830-3015	Prepare Intubation Equipment	UNIT	AN	2-5
	081-830-3016	Intubate A Patient	UNIT	AN	2-5
	081-830-3014	Extubate A Patient	UNIT	AN	2-5
	081-833-3006	Perform A Needle Cricothyroidotomy	UNIT	AN	2-5
	081-833-3005	Perform A Surgical Cricothyroidotomy	UNIT	AN	2-5
	081-833-3007	Perform Needle Chest Decompression	UNIT	AN	2-5
	081-833-3010	Insert An Esophageal Gastric Tube Airway (EGTA)/Esophageal Obturator Airway (EOA)	UNIT	AN	2-5
	081-833-3027	Manage Cardiac Arrest	UNIT	AN	2-5
18. Medications	081-835-3001	Administer Oral Medications	UNIT	AN	2-5
	081-835-3020	Administer Topical Medications	UNIT	AN	2-5
	081-835-3021	Administer Rectal Or Vaginal Medications	UNIT	AN	2-5
	081-835-3022	Administer Medicated Eye Drops Or Ointments	UNIT	AN	2-5
19. General Subjects	081-833-3014	Perform A Neurological Examination On A Patient With Suspected Central Nervous System (CNS) Injuries	UNIT	AN	2-5
	081-835-3030	Determine A Patient's Level Of Consciousness Using The Glasgow Coma Scale	UNIT	AN	2-5

**INDIVIDUAL TASK/ARTEP CROSSWALK**

	057-30	058-30	437-30	446-30	449-30 457-30	456-30	458-30	705	715	765-30
081-831-0007	X	X	X	X				X	X	X
081-831-0008	X	X	X	X			X	X	X	X
081-831-0037										
081-831-0013	X	X	X	X	X	X	X	X	X	X
081-831-0011	X	X	X	X	X	X	X	X	X	X
081-831-0010	X	X	X	X	X	X	X	X	X	X
081-831-0012	X	X	X	X	X	X	X	X	X	X
081-831-0018	X	X	X	X	X	X	X	X	X	X
081-831-0019	X	X	X	X	X	X	X	X	X	X
081-831-0048	X	X	X	X	X	X	X	X	X	X
081-831-0046	X	X	X	X	X	X	X	X	X	X
081-831-0043	X	X	X	X	X	X	X	X	X	X
081-831-0044	X	X	X	X	X	X	X	X	X	X
081-831-0033	X	X	X	X	X	X	X	X	X	X
081-831-0035	X	X	X	X	X	X		X		
081-831-0038	X	X	X	X	X	X	X	X		
081-831-0039	X	X	X	X	X	X	X	X		
081-833-0076		X	X	X	X	X		X	X	X
081-833-0006	X		X					X	X	X
081-833-0007	X	X	X	X				X	X	X
081-833-0010	X	X	X	X			X	X	X	X
081-833-0012			X	X				X		X
081-833-0021		X	X	X				X	X	X
081-833-0023			X	X				X	X	X

	057-30	058-30	437-30	446-30	449-30 457-30	456-30	458-30	705	715	765-30
081-833-0059		X	X	X				X	X	X
081-833-0016	X	X	X	X	X	X		X	X	X
081-833-0017	X	X	X	X	X	X		X	X	X
081-830-3000	X	X	X	X	X			X	X	
081-833-0019	X	X	X	X	X	X	X	X	X	X
081-833-0032	X	X	X	X				X	X	X
081-833-0033	X	X	X	X	X	X		X	X	X
081-833-0034	X	X	X	X	X	X		X	X	X
081-833-0088	X	X	X	X		X		X	X	X
081-833-0089	X	X	X	X	X	X		X	X	X
081-833-0015	X	X	X	X	X	X		X	X	X
081-833-0045	X	X	X	X	X	X	X	X	X	X
081-833-0046	X	X	X	X	X	X		X	X	X
081-833-0049	X	X	X	X	X	X		X	X	X
081-833-0050	X	X	X	X	X	X	X	X	X	X
081-833-0052	X	X	X	X	X	X	X	X	X	X
081-833-0070	X	X	X	X	X	X	X	X	X	X
081-833-3026		X	X	X	X					
081-833-0048	X	X	X	X				X	X	X
081-833-0103		X	X	X				X	X	X
081-833-0054	X	X	X	X	X	X		X	X	X
081-833-0056	X	X	X	X	X	X		X	X	X
081-833-0057	X	X	X	X	X	X		X	X	X
081-833-0058	X	X	X	X	X	X		X	X	X
081-833-0060	X	X	X	X	X	X	X	X	X	X



**STP 8-91B15-SM-TG**

	<b>057-30</b>	<b>058-30</b>	<b>437-30</b>	<b>446-30</b>	<b>449-30</b> <b>457-30</b>	<b>456-30</b>	<b>458-30</b>	<b>705</b>	<b>715</b>	<b>765-30</b>
081-833-0061	X	X	X	X		X	X	X	X	X
081-833-0062	X	X	X	X	X	X	X	X	X	X
081-833-0064	X	X	X	X	X	X	X	X	X	X
081-833-0091				X			X			X
081-833-0092	X	X	X	X	X	X	X	X	X	X
081-833-0072	X	X	X	X	X	X		X	X	X
081-833-0073	X	X	X	X	X	X		X	X	X
081-833-0031	X	X	X	X	X	X	X	X	X	X
081-833-0083	X	X	X		X	X	X	X	X	X
081-833-0084	X	X	X		X	X	X	X	X	X
081-833-0085	X	X	X		X	X	X	X	X	X
081-833-0086	X	X	X		X	X	X	X	X	X
081-833-0093		X	X				X	X		
081-833-0094		X	X				X	X		
081-833-0095	X	X	X				X	X		
081-833-0047	X	X	X	X	X	X	X	X	X	X
081-833-3011	X			X				X	X	X
081-833-3012	X			X				X	X	X
081-833-3013				X				X	X	X
081-833-3025								X		
081-833-3017						X		X	X	X
081-833-3024								X	X	X
081-833-3022								X	X	X
081-833-3023									X	
081-833-0080	X	X	X	X	X	X	X	X	X	X

	057-30	058-30	437-30	446-30	449-30 457-30	456-30	458-30	705	715	765-30
081-833-0082	X	X	X		X	X		X	X	X
071-334-4002		X	X			X		X	X	X
071-334-4001	X	X	X					X		
081-830-3015	X	X	X	X	X			X	X	
081-830-3016	X	X	X	X	X			X	X	
081-830-3014		X	X	X				X	X	
081-833-3006		X	X	X				X		
081-833-3005		X	X	X				X		
081-833-3007		X	X	X	X			X		
081-833-3010	X	X	X	X	X	X		X	X	X
081-833-3027				X						
081-835-3001	X		X	X						
081-835-3020	X		X	X						
081-835-3021	X		X	X						
081-835-3022			X	X						
081-833-3014		X	X	X				X		X
081-835-3030				X						

**CHAPTER 3  
MOS SKILL LEVEL TASKS**

**SECTION I  
SKILL LEVEL 1 TASKS**

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**081-831-0007**

**PERFORM A PATIENT CARE HANDWASH**

**CONDITIONS**

You are about to administer patient care or have just had hand contact with a patient or contaminated material. Necessary materials and equipment: running water or two empty basins, a canteen, a water source, soap, towels (cloth or paper), and a towel receptacle or trash can.

**STANDARDS**

Perform a patient care handwash without recontaminating your hands.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Remove wristwatch and jewelry, if applicable.

*NOTE:* Rings should not be worn. If rings are worn, they should be of simple design with few crevices for harboring bacteria. Fingernails should be clean, short, and free of nail polish.

2. Roll shirt sleeves to above the elbows, if applicable.
3. Prepare to perform the handwash.
  - a. If using running water, turn on the warm water.
  - b. If running water is not available, set up the basins and open the canteen.
4. Wet the hands, wrists, and forearms.
  - a. If using running water, hold the hands, wrists, and forearms under the running water.
  - b. If running water is not available, fill one basin with enough water to cover the hands and refill the canteen.

## STP 8-91B15-SM-TG

5. Cover the hands, wrists, and forearms with soap.

*NOTE:* For routine patient care, use regular hand soap. For an invasive procedure such as a catheterization or an injection, use antimicrobial soap.

6. Wash the hands, wrists, and forearms.

- a. Use a circular scrubbing motion, going from the fingertips toward the elbows.
- b. Give particular attention to creases and folds in the skin.
- c. Wash ring(s), if present.

7. Rinse the hands, wrists, and forearms.

- a. If using running water.

- (1) Hold the hands higher than the elbow under the running water until all soap is removed.
- (2) Do not touch any part of the sink or faucet.

- b. If not using running water.

- (1) Use a clean towel to grasp the canteen with one hand.
- (2) Rinse the other hand, wrist, and forearm, letting the water run into the empty basin. Hold the hands higher than the elbows.
- (3) Repeat the procedure for the other arm.
- (4) Do not touch any dirty surfaces while rinsing the hands.

8. Dry the hands, wrists, and forearms.

- a. Use a towel to dry one arm from the fingertips to the elbow without retracing the path with the towel.
- b. Dispose of the towel properly without dropping the hand below waist level.
- c. Repeat the process for the other arm using another towel.

9. Use a towel to turn off the running water, if applicable.

10. Reinspect the fingernails and clean them and rewash the hands, if necessary.

*Evaluation Preparation*

*Setup:* None

*Brief soldier:* Tell the soldier to perform a patient care handwash. You may specify which method to use. The soldier need not perform both.

*Evaluation Guide***Performance Measures****Results**

1. Remove wristwatch and jewelry, if applicable.	P	F
2. Roll shirt sleeves to above the elbows, if applicable.	P	F
3. Prepare to perform the handwash.	P	F
4. Wet hands, wrists, and forearms.	P	F
5. Cover the hands, wrists, and forearms with soap.	P	F
6. Wash the hands, wrists, and forearms.	P	F
7. Rinse the hands, wrists, and forearms.	P	F
8. Dry the hands, wrists, and forearms.	P	F
9. Use a towel to turn off the running water, if applicable.	P	F
10. Reinspect the fingernails and clean them and rewash the hands, if necessary.	P	F

**REFERENCES:***Required**Related*

None

FM 8-230

**081-831-0008**

**PUT ON STERILE GLOVES**

**CONDITIONS**

Necessary materials and equipment: handwashing facilities, sterile gloves, and a flat, clean, dry surface.

**STANDARDS**

Put on and remove sterile gloves without contaminating self or the gloves.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Select and inspect the package.
  - a. Select the proper size of glove.
  - b. Inspect the package for possible contamination.
    - (1) Water spots.
    - (2) Moisture.
    - (3) Tears.
    - (4) Any other evidence that the package is not sterile.
2. Perform a patient care handwash.
3. Open the sterile package.
  - a. Place the package on a flat, clean, dry surface in the area where the gloves are to be worn.
  - b. Peel the outer wrapper open to completely expose the inner package.
4. Position the inner package.
  - a. Remove the inner package touching only the folded side of the wrapper.
  - b. Position the package so that the cuff end is nearest the soldier.

5. Unfold the inner package.
  - a. Grasp the lower corner of the package.
  - b. Open the package to a fully flat position without touching the gloves.
6. Expose both gloves.
  - a. Grasp the lower corners or designated areas on the folder.
  - b. Pull gently to the side without touching the gloves.
7. Put on the first glove.
  - a. Grasp the cuff at the folded edge and remove it from the wrapper.
  - b. Step away from the table or tray.
  - c. Keeping the hands above the waist, insert the fingers of the other hand into the glove.
  - d. Pull the glove on touching only the exposed inner surface of the glove.

*NOTE:* If there is difficulty in getting the fingers fully fitted into the glove fingers, make the adjustment after both gloves are on.

8. Put on the second glove.
  - a. Insert the fingertips of the gloved hand under the edge of the folded over cuff.

*NOTE:* The gloved thumb may be kept up and away from the cuff area or may be inserted under the edge of the folded over cuff with the fingertips.

- b. Keeping the hands above the waist, insert the fingers of the ungloved hand into the glove.
  - c. Pull the glove on.
  - d. Do not contaminate either glove.
9. Adjust the gloves to fit properly.
  - a. Grasp and pick up the glove surfaces on the individual fingers to adjust them.
  - b. Pick up the palm surfaces and work the fingers and hands into the gloves.
  - c. Interlock the gloved fingers and work the gloved hands until the gloves are firmly on the fingers.

## STP 8-91B15-SM-TG

*NOTE:* If either glove tears while putting them on or adjusting the gloves, both gloves must be removed and the procedure must be repeated.

10. Remove the gloves.

- a. Grasp one glove at the heel of the hand with the other gloved hand.
- b. Peel off the glove, retaining it in the palm of the gloved hand.
- c. Reach under the cuff of the remaining glove with one or two fingers of the ungloved hand.
- d. Peel off the glove over the glove being held in the palm.
- e. Do not contaminate self.

### CAUTION

Do not "snap" the gloves while removing them.

11. Discard the gloves IAW local SOP.

12. Perform a patient care handwash.

### *Evaluation Preparation*

*Setup:* If performance of this task must be simulated for training and evaluation, the same gloves may be used repeatedly as long as they are properly rewrapped after each use. You may give the soldier a torn or moist glove package to test step 1.

*NOTE:* If the soldier does not know his or her glove size, have several different sizes available to try on to determine the correct size.

*Brief soldier:* Tell the soldier to put on and remove the sterile gloves.

### *Evaluation Guide*

#### Performance Measures

#### Results

- |                                     |   |   |
|-------------------------------------|---|---|
| 1. Select and inspect the package.  | P | F |
| 2. Perform a patient care handwash. | P | F |
| 3. Open the sterile package.        | P | F |



**Performance Measures****Results**

4. Position the inner package.	P	F
5. Unfold the inner package.	P	F
6. Expose both gloves.	P	F
7. Put on the first glove.	P	F
8. Put on the second glove.	P	F
9. Adjust the gloves to fit properly.	P	F
10. Remove the gloves.	P	F
11. Discard the gloves IAW the local SOP.	P	F
12. Perform a patient care handwash.	P	F

**REFERENCES:** None

**081-831-0037**

## **DISINFECT WATER FOR DRINKING**

### **CONDITIONS**

You are a member of a field sanitation team. You have just filled a Lyster bag or Water Buffalo from a source that is not safe for drinking. Necessary materials and equipment: calcium hypochlorite, clean stirring implement, mess kit spoon, a canteen cup, and a field chlorination kit.

### **STANDARDS**

Disinfect water to a chlorine residual of 5 parts per million (ppm) or as ordered by the command surgeon.

### **TRAINING/EVALUATION**

#### *Training Information Outline*

1. Mix the stock disinfecting solution.
  - a. Add the prescribed dosage of calcium hypochlorite to 1/2 canteen cup of water.
    - (1) 3 ampules per 36 gallons of water.
    - (2) 22 ampules or 3 plastic MRE spoonfuls (from a bulk container) in 400 gallons of water.
  - b. Stir the stock solution.
2. Add the stock solution to the water container.
  - a. Pour the stock solution into the water container.
  - b. Mix the solution vigorously with a clean implement.
  - c. Cover the container.
3. Flush the faucets.
4. Test the chlorine residual after 10 minutes.
  - a. Follow the manufacturer's instructions on the color comparator in the chlorination kit to test the chlorine residual.
  - b. Retest the chlorine residual after 20 minutes.

5. Retest the water two or three times daily.

### ***Evaluation Preparation***

*Setup:* Test this task only when there is a need to disinfect water for drinking. Do not simulate this task for training or evaluation.

*Brief soldier:* Tell the soldier to disinfect the water. After the soldier completes step 5, ask him or her how often the water should be retested.

### ***Evaluation Guide***

#### **Performance Measures**

#### **Results**

1. Mix the stock disinfecting solution.	P	F
2. Add the stock solution to the water container.	P	F
3. Flush the faucets.	P	F
4. Test the chlorine residual after 10 minutes.	P	F
5. Retest the chlorine residual after 20 minutes.	P	F
6. Retest the water two or three times daily.	P	F

**REFERENCES:** None

081-831-0013

## MEASURE A PATIENT'S TEMPERATURE

### CONDITIONS

You have performed a patient care handwash. Necessary materials and equipment: disinfected oral and rectal thermometers, thermometer canisters marked "used," water soluble lubricant, gauze pads, a watch, and appropriate forms.

### STANDARDS

Record a patient's temperature to the nearest 0.2° F.

### TRAINING/EVALUATION

#### *Training Information Outline*

1. Determine which site to use.

a. Take an oral temperature if the patient is conscious, can follow directions, and can breathe normally through the nose.

#### **CAUTION**

Do not take an oral temperature when the patient--

1. Has had recent facial or oral surgery;
2. Is confused, disturbed, or heavily sedated;
3. Is being administered oxygen by mouth or nose;
4. Is likely to bite down on the thermometer;
5. Has smoked, chewed gum, or ingested anything hot or cold within the last 15 to 30 minutes.

b. Take a rectal temperature if the oral site is ruled out by the patient's condition or when the patient is unconscious.

#### **CAUTION**

Do not take a rectal temperature on a patient with a cardiac condition, diarrhea, a rectal disorder such as hemorrhoids, or recent rectal surgery.

c. Take an axillary temperature if the patient's condition rules out using the other two methods.

2. Select the proper thermometer.

- a. An oral thermometer has a blue tip and may be labeled "Oral."
- b. A rectal thermometer has a red tip and may be labeled "Rectal."
- c. Axillary temperatures are taken with oral thermometers.

3. Explain the procedure and position the patient.

- a. Take an oral temperature with the patient seated or lying face up.
- b. Take a rectal temperature with the patient lying on either side with the top knee flexed.
- c. Take an axillary temperature with the patient lying face up with the armpit exposed.

4. Measure the temperature.

- a. Shake the thermometer down to below 94° F.
- b. Place the thermometer at the proper site.

(1) If you are taking an oral temperature, place the thermometer in the heat pocket under the tongue and tell the patient to close his or her lips and not to bite down.

(2) If you are taking a rectal temperature, insert the thermometer 1 to 2 inches into his or her rectum.

**CAUTION**

Lubricate the tip prior to insertion. Hold the thermometer in place.

(3) If you are taking an axillary temperature, pat the armpit dry and then place the bulb end in the center with the glass tip protruding to the front of the patient's body. Place the arm across his or her chest.

- c. Leave the thermometer in place for the required time.

(1) Oral--at least 3 minutes.

(2) Rectal--at least 2 minutes.

(3) Axillary--at least 10 minutes.

5. Remove the thermometer and wipe it down with a gauze square.

## STP 8-91B15-SM-TG

6. Read the scale.
7. Put the thermometer in the proper "used" canister.
8. Record the temperature to the nearest 0.2° F on the appropriate forms and report any abnormal temperature change immediately to the supervisor.

*NOTE:* The normal temperature range is--

Oral	- 97.0° F to 99.0° F.
Rectal	- 98.0° F to 100.0° F.
Axillary	- 96.0° F to 98.0° F.

*NOTE:* Record an axillary temperature with an "A" on the patient's record. Record a rectal temperature with an "R" on the patient's record.

### *Evaluation Preparation*

*Setup:* To test step 1 for evaluation purposes, create a scenario in which the patient's condition will dictate which site the soldier must choose.

*Brief soldier:* Tell the soldier to measure, evaluate, and record a patient's temperature.

### *Evaluation Guide*

Performance Measures	Results	
1. Determine which site to use.	P	F
2. Select the proper thermometer.	P	F
3. Explain the procedure and position the patient.	P	F
4. Measure the temperature.	P	F
5. Remove the thermometer and wipe it down with a gauze square.	P	F
6. Read the scale.	P	F
7. Put the thermometer in the proper "used" canister.	P	F
8. Record the temperature to the nearest 0.2° F on the appropriate forms and report any abnormal temperature change immediately to the supervisor.	P	F

**REFERENCES:**

*Required*

*Related*

None

FM 8-230

**081-831-0011**

**MEASURE A PATIENT'S PULSE**

**CONDITIONS**

Necessary materials and equipment: a watch, stethoscope, and appropriate forms.

**STANDARDS**

Count a patient's pulse for one full minute. Identify any abnormalities in the pulse rate, rhythm, and strength.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Position the patient so that the pulse site is accessible.
2. Palpate the pulse site.
  - a. Place the tips of the index and middle fingers on the pulse site.

*NOTE:* A stethoscope must be used to monitor the apical site.

- b. Press the fingers, using moderate pressure, to feel the pulse.
3. Count for one full minute and evaluate the pulse.

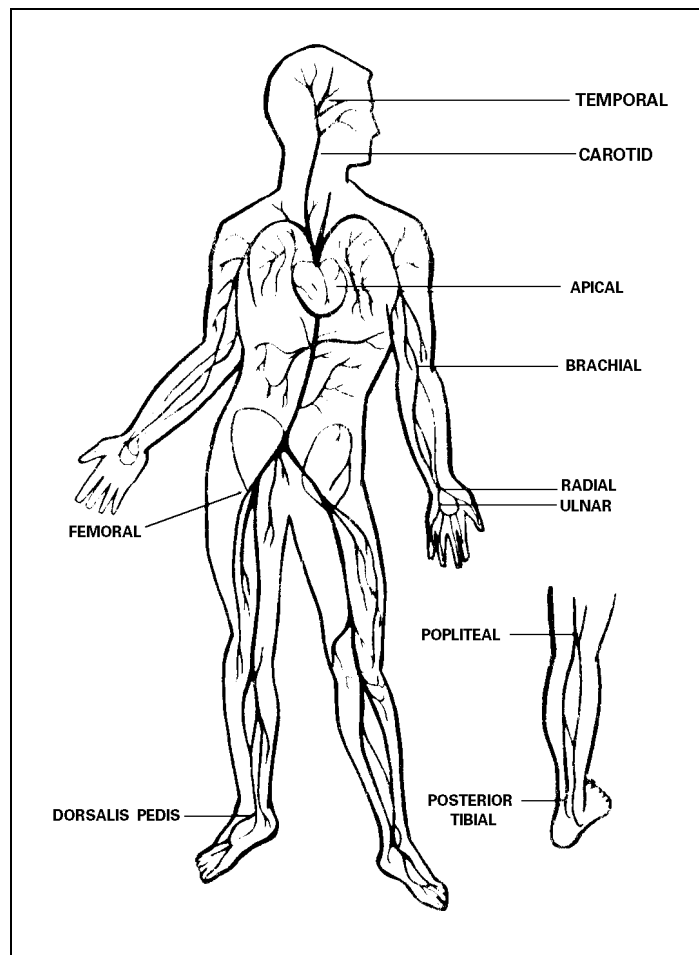
*NOTE:* To detect irregularities, it is necessary to count for one full minute.

- a. Pulse rate.
  - (1) Normal adult rate--60 to 80 beats per minute.
  - (2) Bradycardia--less than 50 beats per minute.
  - (3) Tachycardia--more than 100 beats per minute.
- b. Pulse rhythm.
  - (1) Regular.
    - (a) Usually easy to find.



- (b) Has a regular rate and rhythm.
- (c) Varies with the individual.
- (2) Irregular/intermittent--any change from a regular beating pattern.

*NOTE:* If a peripheral pulse is irregular or intermittent, a second pulse should be taken at the carotid, femoral, or apical site. (See Figure 3-1.)



**Figure 3-1**

c. Pulse strength.

(1) Strong.

(a) Easy to find.

## STP 8-91B15-SM-TG

- (b) Has even beats with good force.
  - (2) Bounding.
    - (a) Easy to find.
    - (b) Exceptionally strong heartbeats which make the arteries difficult to compress.
  - (3) Weak/thready--difficult to find.
4. Record the rate, rhythm, strength, and any significant deviations from normal on the appropriate forms.
  5. Report any significant pulse abnormalities to the supervisor immediately.

### *Evaluation Preparation*

*Setup:* While the soldier is palpating a pulse site, you must palpate the corresponding site. Specify which site the soldier is to palpate. If the apical site is chosen, either a double stethoscope or separate stethoscopes may be used. A tolerance of plus or minus two beats will be allowed.

*Brief soldier:* Tell the soldier to count, evaluate, and record the patient's pulse.

### *Evaluation Guide*

Performance Measures	Results	
1. Position the patient so that the pulse site is accessible.	P	F
2. Palpate the pulse site.	P	F
3. Count for one full minute and evaluate the pulse.	P	F
4. Record the rate, rhythm, strength, and any significant deviations from normal on the appropriate forms.	P	F
5. Report any significant pulse abnormalities to the supervisor immediately.	P	F

**REFERENCES:** None

081-831-0010

## MEASURE A PATIENT'S RESPIRATIONS

### CONDITIONS

Necessary materials and equipment: a watch and appropriate forms.

### STANDARDS

Count a patient's respirations for one full minute. Identify any abnormalities in respiration rate, depth, rhythm, pattern, and quality.

### TRAINING/EVALUATION

#### *Training Information Outline*

1. Count the number of times the chest rises in one minute.

*NOTE:* The patient should not be aware that respirations are being counted. If the patient is aware, he or she often becomes tense, and an accurate count becomes extremely difficult. The normal respiration rate for an adult is generally considered to be between 12 and 20 respirations per minute.

2. Evaluate the respirations.

- a. Depth.

- (1) Normal--deep, even movement of the chest.
- (2) Shallow--minimal rise and fall of the chest and abdomen.
- (3) Deep--the rib cage expands fully, and the diaphragm descends to create a maximum capacity.

- b. Rhythm and pattern.

- (1) Healthy--exhalations are twice as long as inhalations.
- (2) Irregular.
- (3) Hypoventilation--slow and shallow respirations.
- (4) Hyperventilation--sustained increased rate and depth of respiration.
- (5) Sigh--deep inhalation followed by a slow audible exhalation.

## STP 8-91B15-SM-TG

- (6) Apnea--temporary absence of breathing.
- (7) Tachypnea--increased respiration rate, usually 24 or more breaths per minute.
- c. Quality.
  - (1) Normal--effortless, automatic, regular rate, even depth, noiseless, and free of discomfort.
  - (2) Dyspnea--difficult or labored breathing.
  - (3) Wheezing or whistling sound.
  - (4) Rattling or bubbling.
- 3. Check for the physical characteristics of abnormal respirations.
  - a. Appearance--the casualty may appear restless, anxious, pale, ashen, or cyanotic.
  - b. Position--the casualty may alter his or her position by leaning forward or may be unable to lie flat.
  - c. Cough.
    - (1) Acute--comes on suddenly.
    - (2) Chronic--has existed for a long time.
    - (3) Dry--coughs without sputum.
    - (4) Productive--coughs which expel sputum.
      - (a) Normal sputum--clear, semiliquid mucus which may appear watery, frothy, or thick.
      - (b) Abnormal sputum--may be green, yellow, gray, or blood-tinged, and may have a foul or sweetish smell.
- 4. Record the rate of respirations and any observations noted on the appropriate forms.
- 5. Report any abnormal respirations to the supervisor immediately.

***Evaluation Preparation***

*Setup:* You must count the rate with the soldier. If you are using a simulated patient, you may test step 2 by having him or her purposely exhibit abnormal breathing characteristics. A tolerance of plus or minus two counts will be allowed.

*Brief soldier:* Tell the soldier to count, evaluate, and record a patient's respirations.

***Evaluation Guide*****Performance Measures****Results**

- |   |   |   |
|---|---|---|
| 1. Count the number of times the chest rises in one minute.                             | P | F |
| 2. Evaluate the respirations.   | P | F |
| 3. Check for the physical characteristics of abnormal respirations.                     | P | F |
| 4. Record the rate of respirations and any observations noted on the appropriate forms. | P | F |
| 5. Report any abnormal respirations to the supervisor immediately.                      | P | F |

**REFERENCES:** None

**081-831-0012**

**MEASURE A PATIENT'S BLOOD PRESSURE**

**CONDITIONS**

Necessary materials and equipment: sphygmomanometer, clean stethoscope, and appropriate forms.

**STANDARDS**

Measure a patient's blood pressure and record the measurement on the appropriate forms.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Explain the procedure to the patient, if necessary.
  - a. The length of time the procedure will take.
  - b. The site to be used.
  - c. The physical sensations the patient will feel.
2. Check the equipment.
  - a. Ensure that the cuff is deflated completely and fully retighten the thumbscrew.
  - b. Ensure the sphygmomanometer gauge reads zero.

*NOTE:* Steps 2, 3, and 4 describe the procedure for taking the blood pressure at the brachial site. If the brachial site cannot be used, measure the blood pressure using a larger cuff applied to the thigh. The patient should be lying down (preferably on the stomach; otherwise, on the back with one knee flexed). Apply the cuff at mid-thigh, and place the stethoscope over the popliteal artery. The remainder of the procedure is the same as for the brachial artery site.

3. Position the patient.
  - a. Place the patient in a relaxed and comfortable sitting, standing, or lying position.

*NOTE:* A reading obtained from a standing position will be slightly higher.

- b. Place the patient's arm palm up at approximately heart level. Support the arm so that it is relaxed.
4. Place the cuff at the brachial artery site.

- a. Place the cuff so that the lower edge is one to two inches above the elbow and the bladder portion is over the artery.
  - b. Wrap the cuff just tightly enough to prevent slippage.
  - c. If applicable, clip the gauge to the cuff in alignment with the palm.
5. Position the stethoscope, if used.
    - a. Palpate for the brachial pulse.
    - b. Place the diaphragm of the stethoscope over the pulse site.
  6. Inflate the cuff until the gauge reads at least 140 mm Hg or 10 mm Hg higher than the usual range for that patient, if known.

*NOTE:* If a pulsation is heard when the gauge reaches 140 mm Hg, continue to inflate the cuff 10 mm Hg beyond the point at which the last pulsation was heard.

**CAUTION**

The cuff should not remain inflated for more than two minutes.

7. Determine the blood pressure.
  - a. If a stethoscope is used, complete the following steps.
    - (1) Rotate the thumbscrew slowly in a counterclockwise motion, allowing the cuff to deflate slowly.
    - (2) Watch the gauge and remember the reading when the first distinct sound is heard (systolic pressure).
    - (3) Continue to watch the gauge and remember the reading where the sound changes again and becomes muffled or unclear (diastolic pressure).
    - (4) Release the remaining air.
  - b. If a stethoscope is not used, complete the following steps.
    - (1) Palpate for the radial pulse.
    - (2) Rotate the thumbscrew slowly in a counterclockwise motion, allowing the cuff to deflate slowly.

## STP 8-91B15-SM-TG

- (3) Watch the gauge and remember the point at which the pulse returns (systolic pressure).

*NOTE:* The diastolic pressure cannot be determined using this method.

*NOTE:* If the procedure must be repeated, wait at least one minute before repeating steps 5 through 7.

8. Record the blood pressure on the appropriate forms.
  - a. Record the systolic reading over the diastolic reading, for example 120/80.
  - b. Record the readings in even numbers.
9. Evaluate the blood pressure reading by comparing it with one of the following:
  - a. The patient's previous reading.
  - b. An average of the patient's previous readings.
  - c. The normal range: 100-140/60-90 for males and 90-130/50-60 for females.
10. Report abnormal readings to the supervisor.

### *Evaluation Preparation*

*Setup:* A double stethoscope should be used if available. A tolerance of  $\pm 4$  mm Hg will be allowed. If other methods are used, such as independent measurements on different sites or at different times, the evaluator must apply discretion in applying the  $\pm 4$  mm Hg standard. You will allow the soldier to retake the blood pressure at least once if the soldier feels that it is necessary to obtain an accurate reading. You will use discretion in allowing additional repetitions based upon the difficulty of obtaining a reading on the patient.

*Brief soldier:* Tell the soldier to take a patient's blood pressure. Tell the soldier that the blood pressure may be retaken, if necessary, to obtain an accurate reading.

### *Evaluation Guide*

Performance Measures	Results	
1. Explain the procedure to the patient, if necessary.	P	F
2. Check the equipment.	P	F
3. Position the patient.	P	F



**Performance Measures****Results**

4. Place the cuff just tightly enough to prevent slippage.	P	F
5. Position the stethoscope, if used.	P	F
6. Inflate the cuff until the gauge reads at least 140 mm Hg or 10 mm Hg higher than the usual range for that patient, if known.	P	F
7. Determine the blood pressure.	P	F
8. Record the blood pressure on the appropriate forms.	P	F
9. Evaluate the blood pressure.	P	F
10. Report any abnormal readings to the supervisor.	P	F

**REFERENCES:** None

**081-831-0018**

**OPEN THE AIRWAY**

**CONDITIONS**

You are evaluating a casualty who is not breathing. You are not in an NBC environment.

**STANDARDS**

All of the steps to open the casualty's airway are completed without causing unnecessary injury.

***Training Information Outline***

1. Roll the casualty onto his or her back, if necessary.
  - a. Kneel beside the casualty.
  - b. Raise the near arm and straighten it out above the head.
  - c. Adjust the legs so that they are together and straight or nearly straight.
  - d. Place one hand on the back of the casualty's head and neck.
  - e. Grasp the casualty under the arm with the free hand.
  - f. Pull steadily and evenly toward you, keeping the head and neck in line with the torso.
  - g. Roll the casualty as a single unit.
  - h. Place the casualty's arms at his or her sides.
2. Establish the airway using the head-tilt/chin-lift or jaw thrust method.
  - a. Head-tilt/chin-lift method.

**CAUTION**

Do not use this method if a spinal or neck injury is suspected.

**NOTE:** Remove any foreign material or vomitus seen in the mouth as quickly as possible.

- (1) Kneel at the level of the casualty's shoulders.

(2) Place one hand on the casualty's forehead and apply firm, backward pressure with the palm of the hand to tilt the head back.

(3) Place the fingertips of the other hand under the bony part of the casualty's lower jaw, bringing the chin forward.

### CAUTIONS

1. Do not use the thumb to lift the lower jaw.
2. Do not press deeply into the soft tissue under the chin with the fingers.
3. Do not completely close the casualty's mouth.

b. Jaw thrust.

### CAUTION

Use this method if a spinal or neck injury is suspected.

- (1) Kneel at the top of the casualty's head.
- (2) Grasp the angles of the casualty's lower jaw.
- (3) Rest the elbows on the surface on which the casualty is lying.
- (4) Lift with both hands displacing the lower jaw forward while tilting the head backward.

*NOTE:* If this procedure is unsuccessful, tilt the head very slightly.

3. Check for breathing within three to five seconds. While maintaining the open airway position, place an ear over the casualty's mouth and nose, looking toward the chest and stomach.

- a. Look for the chest to rise and fall.
- b. Listen for air escaping during exhalation.
- c. Feel for the flow of air on the side of the casualty's face.

4. Take appropriate action.

- a. If the casualty resumes breathing, maintain the airway and place the casualty in the recovery position.
  - (1) Roll the casualty as a single unit onto his or her side.

## STP 8-91B15-SM-TG

- (2) Place the lower arm behind his or her back.
- (3) Place the hand of the upper arm under his or her chin.
- (4) Flex the upper leg.

*NOTE:* Check the casualty for other injuries, if necessary.

- b. If the casualty does not resume breathing, perform rescue breathing. (See task 081-831-0048.)

### *Evaluation Preparation*

*Setup:* Place a CPR mannequin or another soldier acting as the casualty face down on the ground. For training and evaluation, you may specify to the soldier whether the casualty has a spinal injury to test step 2, or you may create a scenario in which the casualty's condition will dictate to the soldier how to treat the casualty. After step 3 tell the soldier whether the casualty is breathing or not and ask what should be done.

*Brief soldier:* Tell the soldier to open the casualty's airway.

### *Evaluation Guide*

#### **Performance Measures**

#### **Results**

- |   |   |   |
|---|---|---|
| 1. Roll the casualty onto his or her back, if necessary.                    | P | F |
| 2. Establish the airway using the head-tilt/chin-lift or jaw thrust method. | P | F |
| 3. Check for breathing within three to five seconds.                        | P | F |
| 4. Take appropriate action.   | P | F |
| 5. Do not cause further injury to the casualty.                             | P | F |

**REFERENCES:** None

081-831-0019

**CLEAR AN UPPER AIRWAY OBSTRUCTION****CONDITIONS**

You are evaluating a casualty who is not breathing or is having difficulty breathing, and you suspect the presence of an upper airway obstruction.

**STANDARDS**

Complete, in order, all the steps necessary to clear an object from a casualty's upper airway. Continue the procedure until the casualty can talk and breathe normally or until you are relieved by a qualified person.

**TRAINING/EVALUATION***Training Information Outline*

1. Clear the airway.
  - a. Conscious casualty.
    - (1) Determine whether or not the casualty needs help. Ask the casualty whether he or she is choking.
      - (a) If the casualty has good air exchange (is able to speak, coughs forcefully, or wheezes between coughs), do not interfere except to encourage the casualty.
      - (b) If the casualty has poor air exchange (weak, ineffective cough; high-pitched noise while inhaling; increased respiratory difficulty; and possible cyanosis), continue with step 1a(2).
      - (c) If the casualty has a complete airway obstruction (is unable to speak, breathe, or cough and may clutch the neck between the thumb and finger), continue with step 1a(2).
    - (2) If the casualty is lying down, bring him or her to a sitting or standing position.
    - (3) Apply abdominal or chest thrusts.

**NOTE:** Use abdominal thrusts unless the casualty is in the advanced stages of pregnancy, is very obese, or has a significant abdominal wound.

- (a) Abdominal thrusts.
  1. Stand behind the casualty and wrap your arms around his or her waist.

## STP 8-91B15-SM-TG

2. Make a fist with one hand and place the thumb side of the fist against the casualty's abdomen in the midline slightly above the navel and well below the tip of the xiphoid process.

3. Grasp the fist with your other hand and press the fist into the casualty's abdomen with quick backward and upward thrusts.

*NOTE:* Make each thrust a separate, distinct movement given with the intent of relieving the obstruction.

4. Continue giving thrusts until the blockage is expelled, or the casualty becomes unconscious.

(b) Chest thrusts.

1. Stand behind the casualty and encircle his or her chest with your arms just under the armpits.

2. Make a fist with one hand and place the thumb side of the fist against the middle of the casualty's breastbone.

**CAUTION**

Do not position the hand on the xiphoid process or the lower margins of the rib cage.

3. Grasp the fist with your other hand and give backward thrusts.

*NOTE:* Administer each thrust with the intent of relieving the obstruction.

4. Continue giving thrusts until the blockage is expelled, or the casualty becomes unconscious.

*NOTE:* If the casualty becomes unconscious, position the casualty on his or her back, perform a finger sweep (see step 1b(2)), open the airways (see task 081-831-0018), and then start rescue breathing procedures (see task 081-831-0048).

b. Unconscious casualty.

*NOTE:* Perform abdominal or chest thrusts on the unconscious casualty only after attempts to open the airway and ventilate the casualty indicate that the airway is obstructed.

(1) Apply abdominal or chest thrusts.

*NOTE:* Use abdominal thrusts unless the casualty is in the advanced stages of pregnancy, is very obese, or has a significant abdominal wound.

(a) Abdominal thrusts.

1. Kneel astride the casualty's thighs.
2. Place the heel of one hand against the casualty's abdomen in the midline slightly above the navel and well below the tip of the xiphoid process.
3. Place the other hand directly on top of the first.
4. Press into the abdomen with quick upward thrusts up to five times.

(b) Chest thrusts.

1. Kneel close to either side of the casualty's body.
2. With the middle and index fingers of the hand nearest the casualty's legs, locate the lower margin of the casualty's rib cage on the side nearest you.
3. Move the fingers up the rib cage to the notch where the ribs meet the sternum in the center of the lower part of the chest.
4. With the middle finger on this notch, place the index finger next to it on the lower end of the sternum.
5. Place the heel of the other hand on the lower half of the sternum next to the index finger of the first hand.
6. Remove the first hand from the notch and place it on top of the hand on the sternum so that the hands are parallel to each other.

*NOTE:* You may either extend or interlace your fingers but keep the fingers off the casualty's chest.

7. Lock your elbows into position, straighten your arms, and position your shoulders directly over your hands.
8. Press straight down depressing the sternum 1 1/2 to 2 inches and then release the pressure completely without lifting the hands from the chest.
9. Repeat the chest thrust up to five times.

*NOTE:* Make each thrust a separate, distinct movement given with the intent of relieving the obstruction.

(2) Perform a finger sweep.

## STP 8-91B15-SM-TG

- (a) Open the casualty's mouth by grasping both the tongue and lower jaw with your thumb and fingers and lifting.
- (b) Insert the index finger of your other hand down along the inside of the cheek and deeply into the throat to the base of the tongue.
- (c) Use a hooking motion to attempt to dislodge the foreign body and maneuver it into the mouth for removal.

### CAUTION

Do not force the object deeper into the airway.

(3) Attempt to ventilate. If the airway is still not clear, repeat the sequence of thrusts, finger sweep, and attempt to ventilate until the airway is cleared or you are relieved by qualified personnel.

2. When the object is dislodged, check for breathing. Perform rescue breathing, if necessary (see task 081-831-0048) or continue to evaluate the casualty for other injuries.

### *Evaluation Preparation*

**NOTE:** Only the procedure for clearing an airway obstruction in a conscious casualty will be evaluated. The procedure for an unconscious casualty can be evaluated as a part of task 081-831-0048.

**Setup:** You will need another soldier to play the part of the casualty.

**Brief soldier:** Describe the symptoms of a casualty with good air exchange, poor air exchange, or a complete airway obstruction. Ask the soldier what should be done and score step 1 based on the answer. Then, tell the soldier to clear an upper airway obstruction. Tell the soldier to demonstrate how to position the casualty, where to stand, and how to position his or her hands for the thrusts. The soldier must tell you how they should be done and how many thrusts should be performed. Ensure that the soldier understands that he or she must not actually perform the thrusts. After completion of step 5, ask the soldier what must be done if the casualty becomes unconscious.

### *Evaluation Guide*

#### Performance Measures

#### Results

- |   |   |   |
|---|---|---|
| 1. Determine whether the casualty needs help.                         | P | F |
| 2. Move the casualty to a sitting or standing position, if necessary. | P | F |
| 3. Stand behind the casualty.   | P | F |



**Performance Measures**

**Results**

- |   |   |   |
|---|---|---|
| 4. Position arms and hands properly to perform the thrusts.                             | P | F |
| 5. Tell how to perform the thrusts and how many should be performed.                    | P | F |
| 6. State that the following actions would be taken if the casualty becomes unconscious. | P | F |
| a. Reposition the casualty.   |   |   |
| b. Perform a finger sweep.  |   |   |
| c. Open the airway.   |   |   |
| d. Perform rescue breathing procedures.   |   |   |
| 7. Complete all necessary steps in order.   | P | F |

**REFERENCES:** None

**081-831-0048**

## **PERFORM RESCUE BREATHING**

### **CONDITIONS**

You are treating a casualty who is unconscious and is not breathing. You have opened the airway. You are not in an NBC environment.

### **STANDARDS**

Complete, in order, all the steps necessary to restore breathing. Continue the procedure until the casualty starts to breathe or until you are relieved by another qualified person, stopped by a physician, required to perform CPR, or too exhausted to continue.

### **TRAINING/EVALUATION**

#### ***Training Information Outline***

1. Ventilate the casualty using the mouth-to-mouth or mouth-to-nose method, as appropriate.

**NOTE:** The mouth-to-nose method is recommended when you cannot open the casualty's mouth, there are jaw or mouth injuries, or you cannot maintain a tight seal around the casualty's mouth.

- a. Mouth-to-mouth method.

- (1) Maintain the chin-lift while pinching the nostrils closed using the thumb and index fingers of the hand on the casualty's forehead.

- (2) Take a deep breath and make an airtight seal around the casualty's mouth with his or her mouth.

- (3) Blow two full breaths (one and a half to two seconds each) into the casualty's mouth, taking a breath between them while watching for the chest to rise and fall and listening and feeling for air to escape during exhalation.

- (4) If the chest rises and air escapes, go to step 4.

- (5) If the chest does not rise or air does not escape, continue with step 2.

- b. Mouth-to-nose method.

- (1) Maintain the head-tilt with the hand on the forehead while using the other hand to lift the casualty's jaw and close the mouth.

(2) Take a deep breath and make an airtight seal around the casualty's nose with your mouth.

(3) Blow two full breaths (one and a half to two seconds each) into the casualty's nose, taking a breath between them while watching for the chest to rise and fall and listening and feeling for air to escape during exhalation.

*NOTE:* It may be necessary to open the casualty's mouth or separate the lips to allow air to escape.

(4) If the chest rises, go to step 4.

(5) If the chest does not rise, continue with step 2.

2. Reposition the head to ensure an open airway and repeat step 1, if necessary.

a. If the chest rises, go to step 4.

b. If the chest does not rise, continue with step 3.

3. Clear an airway obstruction, if necessary. (See task 081-831-0019.) When the obstruction has been cleared, continue with step 4.

4. Check the carotid pulse for 5 to 10 seconds.

a. While maintaining the head tilt with one hand, place the index and middle fingers of the other hand on the casualty's throat.

b. Slide the fingers into the groove beside the casualty's Adam's apple and feel for a pulse for 5 to 10 seconds.

c. If a pulse is present, go to step 5.

d. If a pulse is not found, begin CPR. (See task 081-831-0046.)

5. Continue rescue breathing.

a. Ventilate the casualty at the rate of about 10 to 12 breaths per minute.

b. Watch for rising and falling of the chest.

c. Recheck for pulse and breathing after every 12 breaths.

*NOTE:* Although not evaluated, continue rescue breathing as stated in the task standard. When breathing is restored, watch the casualty closely, maintain an open airway, and check for other injuries. (See task 081-831-0018.)

***Evaluation Preparation***

*Setup:* For training and evaluation, a CPR mannequin must be used. Position the mannequin on its back with its neck hyperextended. To test step 1, you may specify to the soldier whether to use the mouth-to-mouth or mouth-to-nose method, or you may create a scenario in which the casualty's condition dictates which method is to be used. You may determine how much of the task is tested by telling the soldier whether the airway is clear or a pulse is found as the soldier proceeds through the task. However, you should ensure that the soldier is routed through the task far enough to continue rescue breathing after checking the carotid pulse.

*Brief soldier:* Tell the soldier to perform rescue breathing.

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Ventilate the casualty using the mouth-to-mouth or mouth-to-nose method, as appropriate.	P	F
2. Reposition the head to ensure an open airway and repeat step 1, if necessary.	P	F
3. Clear an airway obstruction, if necessary.	P	F
4. Check the carotid pulse for 5 to 10 seconds.	P	F
5. Continue rescue breathing.	P	F
6. Complete all necessary steps in order.	P	F

**REFERENCES:** None

081-831-0046

**ADMINISTER EXTERNAL CHEST COMPRESSIONS****CONDITIONS**

You are treating a casualty who is not breathing and has no pulse. The airway is open and is clear. Another soldier who is CPR qualified may be available to assist or may arrive while you are performing one-rescuer CPR. You are not in an NBC environment.

**STANDARDS**

Continue CPR until the pulse is restored or until the rescuer(s) is/are relieved by other qualified persons, stopped by a physician, or too tired to continue.

**TRAINING/EVALUATION***Training Information Outline***A. Perform one-rescuer CPR.**

1. Ensure that the casualty is positioned on a hard, flat surface.
2. Position the hands for external chest compressions.
  - a. With the middle and index fingers of the hand nearest the casualty's feet, locate the lower margin of the casualty's rib cage on the side near the rescuer.
  - b. Move the fingers up the rib cage to the notch where the ribs meet the sternum in the center of the lower part of the chest.
  - c. With the middle finger on the notch, place the index finger next to it on the lower end of the sternum.
  - d. Place the heel of the other hand on the lower half of the sternum, next to the index finger of the first hand.
  - e. Remove the first hand from the notch and place it on top of the hand on the sternum so that both hands are parallel to each other.

**NOTE:** You may either extend or interlace your fingers but keep the fingers off the casualty's chest.

3. Position the body.
  - a. Lock the elbows with the arms straight.

## STP 8-91B15-SM-TG

- b. Position the shoulders directly over the hands.
- 4. Give 15 compressions.
  - a. Press straight down to depress the sternum 1 1/2 to 2 inches.
  - b. Come straight up and completely release pressure on the sternum to allow the chest to return to its normal position. The time allowed for release should equal the time required for compression.

### CAUTION

Do not remove the heel of the hand from the casualty's chest or reposition the hand between compressions.

- c. Give 15 compressions in 9 to 11 seconds (at a rate of 80 to 100 per minute).
- 5. Give two full breaths.
  - a. Move quickly to the casualty's head and lean over.
  - b. Open the casualty's airway. (See task 081-831-0018.)
  - c. Give two full breaths (1 1/2 to 2 seconds each).
- 6. Repeat steps A2 through A5 four times.
- 7. Assess the casualty.
  - a. Check for the return of the carotid pulse for three to five seconds.
    - (1) If the pulse is present, continue with step A7b.
    - (2) If the pulse is absent, continue with step A8.
  - b. Check breathing for three to five seconds.
    - (1) If breathing is present, monitor breathing and pulse closely.
    - (2) If breathing is absent, perform rescue breathing only. (See task 081-831-0048.)
- 8. Resume CPR with compressions.

9. Recheck for pulse every three to five minutes.
10. Continue to alternate chest compressions and rescue breathing until--
  - a. The casualty is revived.
  - b. You are too tired to continue.
  - c. You are relieved by competent person(s).
  - d. The casualty is pronounced dead by an authorized person.
  - e. A second rescuer states, "I know CPR," and joins you in performing two-rescuer CPR.

*NOTE:* A qualified second rescuer joins the first rescuer at the end of a cycle after a check for pulse by the first rescuer. The new cycle starts with one ventilation by the first rescuer, and the second rescuer becomes the compressor. Two-rescuer CPR is then initiated.

**B. Two-rescuer CPR.**

1. Compressor: Give five chest compressions at the rate of 80 to 100 per minute.

Ventilator: Maintain an open airway and monitor the carotid pulse occasionally for adequacy of chest compressions.

2. Compressor: Pause.

Ventilator: Give one full breath (one and a half to two seconds).

3. Compressor: Continue to give chest compressions until a change in positions is initiated.

Ventilator: Continue to give ventilations until the compressor indicates that a change is to be made.

4. Compressor: Give a clear signal to change positions.

Ventilator: Remain in the rescue breathing position.

5. Compressor: Give the fifth compression.

Ventilator: Give the breath following the fifth compression.

6. Compressor and ventilator simultaneously switch positions.

## STP 8-91B15-SM-TG

7. New Ventilator: Check the casualty's carotid pulse for five seconds.

- a. If present state, "There is a pulse," and perform rescue breathing.
- b. If not present state, "No pulse." Give the casualty one breath and tell the new compressor to give chest compressions.

New compressor: Position the hands to begin chest compressions as directed by the ventilator.

8. Ventilator: Continue to give one breath on each fifth upstroke of chest compressions and ensure that the chest rises.

Compressor: Continue to give chest compressions at the rate of 80 to 100 per minute.

*NOTE:* If signs of gastric distension are noted, do the following:

1. Recheck and reposition the airway.
2. Watch for the rise and fall of the chest.
3. Ventilate the casualty only enough to cause the chest to rise.

### CAUTIONS

1. Do not push on the abdomen.
2. If the casualty vomits, turn the casualty on the side, clear his airway, and then continue CPR.

9. Continue to perform CPR as stated in the task standard.

*NOTE:* The rescuer doing rescue breathing should recheck the carotid pulse every three to five minutes.

10. When the pulse and breathing are restored, continue to evaluate the casualty. If the casualty's condition permits, place him or her in the recovery position. (See task 081-831-0018.)

### CAUTION

During evacuation CPR or rescue breathing should be continued en route, if necessary. When the pulse and breathing are restored, the casualty should be watched closely.



### *Evaluation Preparation*

*Setup:* For training and evaluation a CPR mannequin must be used. Place the mannequin face up on the floor. One-rescuer CPR, two-rescuer CPR, or a combination of both (see NOTE after step A10) can be evaluated. If two soldiers are involved, they will be designated as "rescuer #1" and "rescuer #2." Rescuer #1 will start in the chest compression position and will be the only one scored during performance of the task. The evaluator will ensure that all aspects of the task are evaluated by indicating whether pulse is present and when the rescuers should change positions.

*Brief soldier:* If two soldiers are involved, tell them about their roles as rescuer #1 and #2. Ask rescuer #1 on what kind of surface the casualty should be positioned. Then, tell the soldier(s) to perform one-rescuer or two-rescuer CPR, as appropriate.

### *Evaluation Guide*

<b>Performance Measures</b>	<b>Results</b>	
1. Position casualty on a hard, flat surface.	P	F
2. Properly position your hands during chest compressions.	P	F
3. Administer the correct number of chest compressions.	P	F
4. Give chest compressions at the rate of 80 to 100 per minute.	P	F
5. Administer the correct number of breaths.	P	F
6. Give the breaths at the correct rate.	P	F
7. Check the carotid pulse for about five seconds approximately one minute after starting CPR.	P	F
8. Recheck the carotid pulse every three to five minutes.	P	F
9. Perform transition to two-rescuer CPR correctly, if applicable.	P	F
10. Change position during two-rescuer CPR correctly, if applicable.	P	F
11. Continue CPR as stated in the task standard.	P	F

**REFERENCES:** None

**081-831-0043**

**IMMOBILIZE A SUSPECTED DISLOCATED AND/OR FRACTURED  
ANKLE USING A WIRE LADDER SPLINT**

**CONDITIONS**

You are evaluating a casualty who has a suspected dislocated or fractured ankle. Necessary materials and equipment: two wire ladder splints, three cravats, padding materials, and scissors or a knife.

**STANDARDS**

Immobilize an ankle without causing unnecessary injury. Do not impair circulation.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Cut the boot laces until all laces are separated.
2. Cut the boot tongue from the top to the bottom.
3. Check for a pedal pulse. (See task 081-831-0011.

**CAUTION**

If no pulse is found, evacuate the casualty as soon as possible.

4. Prepare the splints.
  - a. Bend down both metal prongs at the top of both splints away from the smooth sides of the splints.
  - b. Bend down the first wire ladder splint into an "L" shape with the short end no longer than the length of the uninjured foot.
  - c. Bend back the long end of the "L" shaped splint at the level of the boot top until it lies flat against the rough (outer) side of the splint.
  - d. Place the other wire ladder splint on the ground, place the uninjured foot on the middle portion, and then bend both sides up to form a "U" shape.
  - e. Join the "L" and "U" splints.
    - (1) Fit the "U" splint around the "L" splint to form a cradle.

(2) Hold the splint together.

5. Apply the splint around the casualty's ankle.

a. For an unconscious casualty, gently lift the leg and slide the cradle under the leg until the short end of the "L" touches the boot sole.

**CAUTION**

Do not twist the casualty's leg and ankle.

b. For a conscious casualty--

(1) Tell the casualty to hold his or her leg up slightly.

(2) Slide the cradle under the leg until the short end of the "L" touches the boot sole.

6. Tie the first cravat around the splints.

a. Fully unfold the cravat and center it on the outer side of the leg just above the fracture site.

b. Bring the tails around to the inside of the leg, cross them, and bring them back to the outer side of the leg.

c. Tie a nonslip knot.

7. Check the pedal pulse.

**CAUTION**

If symptoms of circulation or nerve impairment are present after tying any one of the three cravats, the cravat must be loosened.

a. If no pulse is detected, attempt to slide two fingers between the cravat and the front of the boot.

b. If the fingers will not fit, retie the cravat and recheck the pulse.

*NOTE:* If the cravat is not too tight and there is no pulse, continue with step eight and evacuate the casualty as soon as possible.

c. If a pulse is detected, continue with the next step.

8. Tie the second cravat.

## STP 8-91B15-SM-TG

- a. Fully unroll the cravat and "cup" the center of the cravat around the splint at the boot heel.
  - b. Bring the tail around the foot, cross the cravats on the top of the boot toe, and bring the tails of the cravats down under the boot sole.
  - c. Tie a nonslip knot on the outer edge of the splint.
9. Check the pedal pulse IAW step 7.
  10. Tie the third cravat.
    - a. Fully unroll the cravat and center it on the outer side of the leg at the top of the splints.
    - b. Bring the tails around to the inner side of the leg, cross them, and bring them back to the outer side of the leg.
    - c. Tie a nonslip knot on the outer edge of the splint.
  11. Check the pedal pulse IAW step 7.
  12. Record the treatment given. (See task 081-831-0033.)

*NOTE:* Although not evaluated, continue to evaluate the casualty.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, have another soldier act as the casualty. To test steps 1 and 2, have the soldier explain the procedures. Do not have him or her cut the laces or the boot. Specify which ankle is injured.

*Brief soldier:* Tell the soldier to splint the injured ankle.

### ***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Cut the boot laces until all laces are separated.	P	F
2. Cut the boot tongue from the top to the bottom.	P	F
3. Check for a pedal pulse.	P	F
4. Prepare the splints.	P	F
5. Apply the splint around the casualty's ankle.	P	F

**Performance Measures****Results**

6. Tie the first cravat around the splints.	P	F
7. Check the pedal pulse.	P	F
8. Tie the second cravat.	P	F
9. Check the pedal pulse.	P	F
10. Tie the third cravat.	P	F
11. Check the pedal pulse.	P	F
12. Record the treatment given.	P	F
13. Do not cause further injury to the casualty.	P	F

**REFERENCES:** None

**081-831-0044**

**APPLY A PNEUMATIC SPLINT TO A CASUALTY WITH A  
SUSPECTED FRACTURE OF AN EXTREMITY**

**CONDITIONS**

You are evaluating a casualty who has a suspected fractured extremity. Necessary equipment: pneumatic splint.

**STANDARDS**

Immobilize an extremity without causing unnecessary injury or impairing circulation.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Check the equipment both visually and manually for the following:
  - a. Holes.
  - b. Function of the air valve.
  - c. Function of the zipper.
2. Open the splint completely and place it next to the injured extremity.
3. Lift and support the injured extremity.
4. Place the splint under the injured extremity and position the splint around the injured area.
5. Inflate the splint.
  - a. Draw the zipper completely closed.
  - b. Inflate the splint by mouth until a slight indentation can be made with a thumb or finger.

**CAUTION**

Do not use an air pump.

6. Monitor the splint.

- a. Partially deflate the splint every 20 to 30 minutes to reestablish peripheral circulation.
- b. In an aircraft limit the inflation pressure to that which is adequate for fracture support only.

**CAUTION**

Do not overinflate. Temperature and air pressure may cause too much pressure to be exerted, thereby cutting off circulation to the extremity.

- 7. Check for peripheral circulation.
  - a. Check the color and temperature of the limb distal to the splint.
  - b. Question the casualty about numbness and tingling sensations.
  - c. If the circulation is impaired, partially deflate the splint.

***Evaluation Preparation***

*Setup:* For training and evaluation have another soldier act as the casualty and specify the location of the fracture.

*Brief soldier:* Tell the soldier to apply the pneumatic splint to the specified fractured extremity. To test step 6, have the soldier tell you what he or she would do to monitor the splint under normal conditions and in an aircraft.

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Check the equipment both visually and manually.	P	F
2. Open the splint completely and place it next to the injured extremity.	P	F
3. Lift and support the injured extremity.	P	F
4. Place the splint under the injured extremity and position the splint around the injured area.	P	F
5. Inflate the splint.	P	F
6. Monitor the splint.	P	F
7. Check for peripheral circulation.	P	F

**STP 8-91B15-SM-TG**

**Performance Measures**

8. Do not cause further injury to the casualty.

**Results**

P      F

**REFERENCES:** None



081-831-0033

**INITIATE A FIELD MEDICAL CARD****CONDITIONS**

You have treated a casualty and must record the treatment given. Necessary materials and equipment: DD Form 1380 (Field Medical Card) and a pen or pencil.

**STANDARDS**

Complete, at minimum, blocks 1, 3, 4, 7, 9, and 11. Complete blocks 2, 5, 6, 8, 12, 13, 14, 15, 16, and 17 as appropriate. Complete other blocks as time permits.

**TRAINING/EVALUATION***Training Information Outline*

1. Remove the protective sheet from the carbon copy.
2. Complete the minimum required blocks.
  - a. Block 1. Enter the casualty's name, rank, and complete social security number (SSN). If the casualty is a foreign military person (including prisoners of war), enter his or her military service number. Enter the casualty's military occupational specialty (MOS) or area of concentration for specialty code. Enter the casualty's religion and sex.
  - b. Block 3. Use the figures in the block to show the location of the injury or injuries. Check the appropriate box(es) to describe the casualty's injury or injuries.

**NOTE:** Use only authorized abbreviations. Except for those listed below, however, abbreviations may not be used for diagnostic terminology.

Abr W--Abraded wound.  
Cont W--Contused wound.  
FC--Fracture (compound) open.  
FCC--Fracture (compound) open comminuted.  
FS--Fracture (simple) closed.  
LW--Lacerated wound.  
MW--Multiple wounds.  
Pen W--Penetrating wound.  
Perf W--Perforating wound.  
SL--Slight.  
SV--Severe.

## STP 8-91B15-SM-TG

*NOTE:* When more space is needed, attach another DD Form 1380 to the original. Label the second card in the upper right corner "DD Form 1380 #2." It will show the casualty's name, grade, and SSN.

- c. Block 4. Check the appropriate box.
  - d. Block 7. Check the yes or no box. Write in the dose administered and the date and time that it was administered.
  - e. Block 9. Write in the information requested. If you need additional space, use Block 14.
  - f. Block 11. Initial the far right side of the block.
3. Complete the other blocks as time permits. Most blocks are self-explanatory. The following specifics are noted:
- a. Block 2. Enter the casualty's unit of assignment and the country of whose armed forces he or she is a member. Check the armed service of the casualty, that is, A/T = Army, AF/A = Air Force, N/M = Navy, and MC/M Marine.
  - b. Block 5. Write in the casualty's pulse rate and the time that the pulse was measured.
  - c. Block 6. Check the yes or no box. If a tourniquet is applied, you should write in the time and date it was applied.
  - d. Block 8. Write in the time, date, and type of IV solution given. If you need additional space, use Block 9.
  - e. Block 10. Check the appropriate box. Write in the date and time of disposition.
  - f. Block 12. Write in the time and date of the casualty's arrival. Record the casualty's blood pressure, pulse, and respirations in the space provided.
  - g. Block 13. Document the appropriate comments by the date and time of observation.
  - h. Block 14. Document the provider's orders by date and time. Record the dose of tetanus administered and the time it was administered. Record the type and dose of antibiotic administered and the time it was administered.
  - i. Block 15. The signature of the provider or medical officer is written in this block.
  - j. Block 16. Check the appropriate box and enter the date and time.
  - k. Block 17. This block will be completed by the United Ministry Team. Check the appropriate box of the service provided. The signature of the chaplain providing the service is written in this block.

***Evaluation Preparation***

*Setup:* For training and evaluation have another soldier act as a casualty and have him or her respond to the soldier's questions on personal data.

*Brief soldier:* Tell the soldier to complete the FMC by asking appropriate questions of the casualty. Tell the soldier being tested any necessary information such as the nature of the wound and the treatment given. To test step 2, you may either have the soldier complete the minimum required blocks, or you may require the completion of all blocks. After step 2 ask the soldier what must be done with each copy of the FMC.

***Evaluation Guide*****Performance Measures****Results**

- |  |   |   |
|--|---|---|
| 1. Remove the protective sheet from the carbon copy.   | P | F |
| 2. At a minimum complete blocks 1, 3, 4, 7, 9, and 11. | P | F |
| 3. Make proper distribution of the FMC copies.         | P | F |

**REFERENCES:** None

**081-831-0035**

**MANAGE A CONVULSIVE AND/OR SEIZING PATIENT**

**CONDITIONS**

Necessary materials and equipment: padded tongue blade and padding materials.

**STANDARDS**

Complete all steps to manage a convulsive and/or seizing patient without allowing or causing unnecessary injury to the patient.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Identify the type of convulsion and/or seizures based upon the following characteristic signs and symptoms:

a. Petit mal.

(1) Brief loss of consciousness without loss of motor tone.

(2) Found chiefly in children and rarely an emergency.

b. Focal.

(1) One part of the body (arm, leg, face) is usually involved in tonic-clonic twitching.

*NOTE:* "Tonic" is muscle tension (stiffness or rigidity). "Clonic" is the alternating contraction and relaxation of muscles in rapid succession.

(2) Motor symptoms begin in the patient's hand and/or foot and progress up the extremity or spread from the corner of the mouth.

(3) May rapidly progress to generalized convulsions.

c. Grand mal (generalized).

(1) May be preceded by an aura.

(2) Loss of consciousness and intense tonic-clonic movement.

(3) May involve incontinence, biting of the tongue, or mental confusion.

- (4) The patient will have a stuporous or comatose period following the seizure.
- d. Status epilepticus.
  - (1) Two or more seizures without intervening period of consciousness.
  - (2) A dire medical emergency, if untreated may lead to--
    - (a) Aspiration of secretions.
    - (b) Cerebral or tissue hypoxia.
    - (c) Brain damage or death.
    - (d) Fractures of long bones.
    - (e) Head trauma.
    - (f) Injured tongue from biting.

*NOTE:* Mentally note the aspects of seizure activity for recording after the seizure.

- 2. Maintain the airway of a patient exhibiting tonic-clonic movement.
  - a. For a patient with a patent airway, insert a padded tongue blade or similar item between the patient's back teeth.

**CAUTION**

If the patient's teeth are clenched, do not attempt to forcibly open the patient's jaw.

- b. For a patient with an obstructed airway, an oropharyngeal airway should be inserted, if possible and necessary, by trained medical personnel. A patient in status epilepticus should have oxygen administered by face mask or nasal prongs.
- 3. Place the patient on his or her side, if possible.
  - a. Observe the patient to prevent aspiration and suffocation.
  - b. The patient's mouth and throat should be suctioned by trained personnel, if possible.

**CAUTIONS**

1. Do not elevate the patient's head.
2. Do not restrain the patient's limbs during seizures.

4. Prevent injury to tissue and bones by padding or removing objects on which the patient may injure himself or herself.

5. Manage the patient after the convulsive state has ended.

- a. Place the patient on his side, if necessary.
- b. Continue to maintain the patient's airway.
- c. Observe for apnea (the cessation of breathing).
- d. If possible, place the patient in a quiet, reassuring atmosphere.

**CAUTION**

Sudden, loud noises may cause another seizure.

6. Record the seizure activity.

- a. Duration of the seizure.
- b. Presence of cyanosis, breathing difficulty, or apnea.
- c. Level of consciousness before, during, and after the seizure.
- d. Whether preceded by aura (ask the patient).
- e. Muscles involved.
- f. Type of motor activity.
- g. Incontinence.
- h. Eye movement.
- i. Previous history of seizures, head trauma, and/or drug or alcohol abuse.

7. Evacuate the patient.
  - a. Position the patient on his or her side.
  - b. Arrange for the administration of oxygen or suction, if available and necessary.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, have another soldier act as a patient.

*Brief soldier:* Tell the soldier to manage the patient.

### ***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Identify the type of convulsions and/or seizures.	P	F
2. Maintain the airway of a patient exhibiting tonic-clonic movement.	P	F
3. Place the patient on his or her side, if possible.	P	F
4. Prevent injury to tissue and bones by padding or removing objects on which the patient may injure himself or herself.	P	F
5. Manage the patient after the convulsive state has ended.	P	F
6. Record the seizure activity.	P	F
7. Evacuate the patient.	P	F
8. Do not cause further injury to the patient.	P	F

**REFERENCES:** None

**081-831-0038**

**TREAT A CASUALTY FOR A HEAT INJURY**

**CONDITIONS**

A casualty is suffering from a heat injury. No other more serious injuries or conditions are present. Necessary materials and equipment: water, salt, a thermometer, a stethoscope, and a sphygmomanometer.

**STANDARDS**

Provide the correct treatment based upon the signs and symptoms of the injury.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Identify the type of heat injury based upon the following characteristic signs and symptoms:
  - a. Heat cramps--muscle cramps of the arms, legs, and/or abdomen.
  - b. Heat exhaustion.
    - (1) Often--
      - (a) Profuse sweating and pale (or gray), moist, cool skin.
      - (b) Headache.
      - (c) Weakness or faintness.
      - (d) Dizziness.
      - (e) Loss of appetite or nausea.
    - (2) Sometimes--
      - (a) Heat cramps.
      - (b) Nausea (with or without vomiting).
      - (c) Urge to defecate.
      - (d) Chills.



- (e) Rapid breathing.
  - (f) Tingling sensation of the hands and feet.
  - (g) Confusion.
- c. Heat stroke.
- (1) Rapid onset with the core body temperature rising to above 106° F within 10 to 15 minutes.
  - (2) Hot, dry skin.
  - (3) Headache.
  - (4) Dizziness.
  - (5) Nausea (stomach pains).
  - (6) Confusion.
  - (7) Weakness.
  - (8) Loss of consciousness.
  - (9) Possible seizures.
  - (10) Pulse and respirations are weak and rapid.

2. Provide the proper first aid for the heat injury.

a. Heat cramps.

- (1) Move the casualty to a cool shaded area, if possible.
- (2) Loosen the casualty's clothing unless he or she is in a chemical environment.
- (3) Give the casualty at least one canteen of salt solution. Dissolve 1/4 teaspoon (one MRE packet) of salt in one canteen of water. If salt is unavailable, give plain water.
- (4) Evacuate the casualty if the cramps are not relieved after treatment.

b. Heat exhaustion.

- (1) Conscious casualty.

## STP 8-91B15-SM-TG

- (a) Move the casualty to a shaded area, if possible.
  - (b) Loosen and/or remove the casualty's clothing and boots unless he or she is in a chemical environment.
  - (c) Pour water on the casualty and fan him or her, if possible.
  - (d) Slowly give the casualty one canteen of salt solution. (See step 2a(3).)
  - (e) Elevate the casualty's legs.
- (2) An unconscious casualty or one who is nauseated, unable to retain fluids, or whose symptoms have not improved after 20 minutes--
- (a) Cool the casualty as in step 2b(1).
  - (b) Evacuate the casualty to an MTF for IV therapy or if qualified, initiate an IV infusion of Ringer's lactate or sodium chloride.
- c. Heat stroke.

### CAUTION

Heat stroke is a medical emergency. If the casualty is not cooled rapidly, the body cells, especially the brain cells, are literally cooked; irreversible damage is done to the central nervous system. The casualty must be evacuated to the nearest medical treatment facility immediately.

- (1) Conscious casualty.
  - (a) Remove the casualty's outer garments and/or protective clothing, if possible.
  - (b) Keep the casualty out of the direct sun, if possible.
  - (c) Immerse the casualty in cold water, if available, and massage him or her.
  - (d) Lay the casualty down and elevate his or her legs.
  - (e) Have the casualty slowly drink at least one canteen of salt solution. (See step 2a(3).)
  - (f) Evacuate the casualty to an MTF for IV therapy or, if qualified, initiate an IV infusion of Ringer's lactate or sodium chloride to maintain a systolic blood pressure of at least 90 mm Hg.
- (2) Unconscious casualty or one who is vomiting or unable to retain oral fluids.

- (a) Cool the casualty as in step 2c(1) but give nothing by mouth.
  - (b) Initiate an IV, if qualified.
  - (c) Evacuate the casualty.
3. Record the treatment given. (See task 081-831-0033.)

*Evaluation Preparation*

*Setup:* For training and evaluation, describe to the soldier the signs and symptoms of heat cramps, heat exhaustion, or heat stroke and ask the soldier what type of heat injury is indicated.

*Brief soldier:* Ask the soldier what should be done to treat the heat injury.

*Evaluation Guide*

Performance Measures	Results	
1. Identify the type of heat injury.	P	F
2. Provide the proper first aid for the heat injury.	P	F
3. Record the treatment given.	P	F

**REFERENCES:** None

**081-831-0039**

**TREAT A CASUALTY FOR A COLD INJURY**

**CONDITIONS**

No other more serious injuries or conditions are present. Necessary materials and equipment: dry clothing or similar material, sterile dressings, and a thermometer.

**STANDARDS**

Correct treatment is provided based upon the signs and symptoms of the injury.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Recognize the signs and symptoms of cold injuries.
  - a. Chilblain is caused by repeated prolonged exposure of bare skin to low temperatures from 60° F down to 32° F.
    - (1) Acutely red, swollen, hot, tender, and/or itching skin.
    - (2) Surface lesions with shedding of dead tissue or bleeding lesions.
  - b. Frostbite is caused by exposure of the skin to cold temperatures that are usually below 32° F depending on the windchill factor, length of exposure, and adequacy of protection.

*NOTE:* The onset is signaled by a sudden blanching of the skin of the nose, ears, cheeks, fingers, or toes followed by a momentary tingling sensation. Frostbite is indicated when the face, hands, or feet stop hurting.

- (1) Superficial (first and second degree).
  - (a) Redness of the skin in light-skinned individuals and grayish coloring of the skin in dark-skinned individuals, followed by a flaky sloughing of the skin.
  - (b) Blister formation 24 to 36 hours after exposure followed by sheet-like sloughing of the superficial skin (second degree).
- (2) Deep.
  - (a) Loss of feeling.

- (b) Pale, yellow, waxy look if the affected area is unthawed.
- (c) Solid feel of the frozen tissue.
- (d) Blister formation 12 to 36 hours after exposure unless rewarming is rapid.
- (e) Appearance of red-violet discoloration one to five days after the injury.

*NOTE:* Gangrene and residual nerve damage will result without proper treatment.

c. Generalized hypothermia is caused by prolonged exposure to low temperatures, especially with wind and wet conditions, and it may be caused by immersion in cold water.

**CAUTION**

With generalized hypothermia the entire body has cooled with the core temperature below 95° F. This is a medical emergency.

- (1) Moderate hypothermia.

*NOTE:* This condition should be suspected in any chronically ill person who is found in an environment of less than 50° F.

- (a) Conscious, but usually apathetic or lethargic.
- (b) Shivering, with pale, cold skin.
- (c) May have acetone scent to breath.
- (2) Severe hypothermia.
  - (a) Unconscious or stuporous.
  - (b) Ice cold skin.
  - (c) Inaudible heart beat.
  - (d) Unobtainable blood pressure.
  - (e) Unreactive pupils.
  - (f) Very slow respirations.

## STP 8-91B15-SM-TG

d. Immersion syndrome (immersion foot, trench foot and hand) is caused by fairly long (hours to days) exposure of the feet or hands to wet conditions at temperatures from about 50° F down to 32° F.

- (1) First phase (anesthetic).
  - (a) There is no pain sensation, but the affected area feels cold.
  - (b) The pulse is weak at the affected area.
- (2) Second phase (reactive hyperemic)--limbs feel hot and/or burning and have shooting pains.
- (3) Third phase (vasospastic).
  - (a) Affected area is pale.
  - (b) Cyanosis.
  - (c) Pulse strength decreases.
- (4) Check for blisters, swelling, redness, heat, hemorrhage, or gangrene.

e. Snow blindness.

- (1) Scratchy feeling in the eyes as if from sand or dirt.
- (2) Watery eyes.
- (3) Pain, possibly as late as three to five hours later.
- (4) Reluctant or unable to open eyes.

2. Treat the cold injury.

a. Chilblain.

- (1) Apply local rewarming within minutes.
- (2) Protect lesions (if present) with dry sterile dressings.

### CAUTION

Do not treat with ointments.

b. Frostbite.

- (1) Apply local rewarming using body heat.

**CAUTION**

Avoid thawing the affected area if it is possible that the injury may refreeze before reaching the treatment center.

- (2) Loosen or remove constricting clothing and remove jewelry.
- (3) Increase insulation and exercise the entire body as well as the affected body part(s).

**CAUTION**

Do not massage the skin or rub anything on the frozen parts.

- (4) Move the casualty to a sheltered area, if possible.
- (5) Protect the affected area from further cold or trauma.
- (6) Evacuate the casualty.

*NOTE:* For frostbite of a lower extremity evacuate the casualty by litter, if possible.

**CAUTION**

Do not allow the casualty to use tobacco or alcohol.

c. Generalized Hypothermia.

- (1) Moderate.
  - (a) Remove the casualty from the cold environment.
  - (b) Replace wet clothing with dry clothing.
  - (c) Cover the casualty with insulating material or blankets.
  - (d) If available, apply heating pads to the casualty's armpits, groin, and abdomen.

## STP 8-91B15-SM-TG

*NOTE:* If far from a medical treatment facility and the situation and facilities permit, immerse the casualty in a tub of 105° F water.

- (e) If available, give sugar and sweet warm fluids.

### CAUTION

Do not give the casualty alcohol.

- (f) Wrap the casualty from head to toe.

- (g) Evacuate the casualty lying down.

- (2) Severe.

### CAUTION

Handle the casualty very gently.

- (a) Cut away wet clothing and replace it with dry clothing.

- (b) Maintain the airway. (See task 081-831-0018.)

*NOTE:* Do not use artificial airways or suctioning devices.

1. Administer oxygen if trained personnel and equipment are available.
2. Assist with ventilation if the casualty's respiration rate is less than five per minute.

### CAUTION

Do not hyperventilate the casualty. Keep the rate of artificial ventilation at approximately 8 to 10 per minute.

- (c) Monitor the heartbeat. (See task 081-831-0011.) If none is detected, begin CPR. (See tasks 081-831-0046 and 081-831-0048.)

- (d) Evacuate the casualty positioned on his or her back with the head in a 10° head-down tilt.

*NOTE:* The treatment of moderate hypothermia is aimed at preventing further heat loss and rewarming the casualty as rapidly as possible. Rewarming a casualty with severe hypothermia is critical to saving his or



her life, but the kind of care rewarming requires is nearly impossible to carry out in the field. Evacuate the casualty promptly to a medical treatment facility. Use stabilizing measures en route.

d. Immersion syndrome.

(1) Dry the affected part immediately and gradually rewarm it in warm air.

**CAUTION**

Never massage the skin. After rewarming the affected part, it may become swollen, red, and hot. Blisters usually form due to circulation return.

(2) Protect the affected part from trauma and secondary infection.

(3) Elevate the affected part.

(4) Evacuate the casualty as soon as possible.

e. Snow blindness--cover the eyes with a dark cloth and evacuate the casualty to a medical treatment facility.

***Evaluation Preparation***

*Setup:* For training and evaluation have another soldier act as the casualty. Select one of the types of cold injuries on which to evaluate the soldier. Coach the simulated casualty on how to answer questions about symptoms. Physical signs and symptoms that the casualty cannot readily simulate, for example blisters, must be described to the soldier.

*Brief soldier:* Tell the soldier to determine what cold injury the casualty has. After the cold injury has been identified, ask the soldier to describe the proper treatment.

***Evaluation Guide***

Performance Measures	Results	
1. Identify the type of cold injury.	P	F
2. Provide the proper first aid treatment for the injury.	P	F

*NOTE:* Although not evaluated, the soldier would record the treatment given on the appropriate form and evacuate the casualty as necessary.

**REFERENCES:** None

**081-833-0076**

## **APPLY RESTRAINING DEVICES TO PATIENTS**

### **CONDITIONS**

You have identified the patient and explained the procedure. An assistant is available. Necessary materials and equipment: a bed, wrist and ankle restraining devices, ABD pads, padding materials, litters, flexible gauze (kerlix/kling), rifle slings, web belts, elastic bandages, bandoleers, cravats, and sheets.

### **STANDARDS**

Apply restraining devices to a patient without causing injury to the patient or self.

### **TRAINING/EVALUATION**

#### *Training Information Outline*

*NOTE:* In a field environment, the need for restraints may be your own decision, especially in the absence of senior medical personnel.

1. Apply wrist and ankle restraints.

*NOTE:* If you apply ankle restraints, also apply wrist restraints.

#### **WARNINGS**

1. Do not attempt to apply restraining devices by yourself. Get adequate help.
2. A patient who is depressed or has an altered level of consciousness should be positioned on the stomach with the head turned to the side.
3. Position restraints to avoid causing other injury to a wound or interfering with IV lines, catheters, and tubes.

- a. Adjustable limb holders (cuff and strap).
  - (1) Clean and powder the skin around the wrists and ankles, if possible.
  - (2) Pad the limb with ABD pads or similar material.
  - (3) Position the restraint cuff over the padded limb.
  - (4) Thread the strap through the loop on the cuff. Pull the straps snugly enough to restrict free movement of the limb.

*NOTE:* If two fingers can be comfortably inserted under the cuff, the restraint is snug enough. The patient, however, must not be able to wiggle his hand out of the cuff.

- (5) Wrap the strap around the bedframe.
- (6) Lock the buckle and position it facing the outside of the bedframe for quick access.
- (7) Repeat steps 1a(2) through 1a(6) for each limb.

*NOTE:* The keys to the locked restraints must be readily available.

b. Improvised restraints.

- (1) Clean and powder the skin around the wrists and ankles, if possible.
- (2) Pad the limb with any soft cloth such as towels, gauze, cravats, clean handkerchiefs, or clothing.
- (3) Secure the restraining material (gauze or roller bandage) to the limb with a clove hitch.
- (4) Pull the knot to fit the limb snugly.
- (5) Using a bow knot, tie both free ends to the bedframe in a location inaccessible to the patient.
- (6) Repeat steps 1b(2) through 1b(5) for each limb.

2. Apply mitt restraints.

- a. Place the patient's hand in a naturally flexed position.
- b. Place a soft rolled dressing or similar material in the patient's hand and close the hand.
- c. Wrap the entire hand snugly with a flexible gauze bandage (kerlix, kling).
- d. Secure the bandage with tape, not clips.

**CAUTION**

Remove and replace mitts at least every eight hours. Clean the skin and perform range-of-motion exercises.

3. Apply sheet restraints.

## STP 8-91B15-SM-TG

*NOTE:* This procedure requires the assistance of another person.

a. Litter or stretcher.

- (1) Unfold a sheet. Hold it at opposite corners and fold it lengthwise.
- (2) Twirl the sheet into a tight roll.
- (3) Place the patient on his or her stomach on a litter. Turn the head to the side.

### WARNING

Check the patient frequently because he or she may suffocate while in the prone position.

- (4) Place the middle of the rolled sheet diagonally across the patient's upper back and one shoulder.
- (5) Bring both ends of the sheet under the litter, cross the ends, and bring the ends up over the other shoulder and upper back. Tie snugly in the middle of the upper back.
- (6) Secure one wrist to the litter, parallel to the thigh, using a wrist restraint.
- (7) Secure the other wrist above the head by attaching it to the nearest litter handle using a wrist restraint.

### CAUTION

Use litter or stretcher restraints only as a temporary restraint for a patient who is combative or uncontrollable.

b. Bed.

- (1) Fold a sheet in half lengthwise.
- (2) Tuck approximately two feet of one end of the sheet under one side of the mattress at the patient's chest level.
- (3) Bring the other end of the sheet over the patient's chest, keeping the sheet over the arms. Tuck the free end of the sheet snugly under the other side of the mattress.
- (4) If further restriction is necessary, apply sheets in the same manner at the level of the patient's abdomen, legs, knees, and ankles.

*NOTE:* Use this method of restraint only for limiting movement. It is not a secure method of restraining a violent patient.

4. Apply field expedient restraints.

*NOTE:* Field expedient restraints should not be used for long periods of time and should be replaced with regular restraining devices as soon as possible.

a. Mixed equipment. Restraints may be improvised from such items as rifle slings, web belts, bandoleers, or cravats.

(1) Restrain the patient's arms and legs tight enough to restrict movement but not so tight as to restrict circulation.

(2) Lay the patient on the ground.

b. Double litters.

(1) Place the patient on his or her stomach on a litter. Turn the head to the side.

(2) Place the patient's hands alongside the thighs and secure them to the litter with wrist restraints.

(3) Place the other litter, carrying side down, on top of the patient.

(4) Bind the litters together with two or more litter straps.

(5) Place the litter strap buckles in a location inaccessible to the patient.

5. Check the patient at least once every half hour for signs of distress and security of restraints.

**WARNING**

The use of restraints has the following hazards:

1. Tissue damage under the restraints.
2. Development of pressure areas.
3. Nerve damage.
4. Injury or death in case of fire or other emergencies.
5. Inability to effectively resuscitate a patient.
6. Possibility of shoulder dislocations in combative patients or those with seizure activity.

6. Change the patient's position at least once every two hours, day and night. Exercise the limbs through normal range-of-motion activities.

## STP 8-91B15-SM-TG

7. Evacuate the patient, if necessary.

### *Evaluation Guide*

#### **Performance Measures**

#### **Results**

- |   |   |   |
|---|---|---|
| 1. Apply wrist and ankle restraints, as applicable. | P | F |
| 2. Apply mitt restraints, as applicable.            | P | F |
| 3. Apply sheet restraints, as applicable.           | P | F |
| 4. Apply field expedient restraints, as applicable. | P | F |
| 5. Check the patient.                               | P | F |
| 6. Change the patient's position.                   | P | F |
| 7. Evacuate the patient, if necessary.              | P | F |
| 8. Do not cause further injury to the patient.      | P | F |

**REFERENCES:** None

081-833-0006

**MEASURE A PATIENT'S INTAKE AND OUTPUT****CONDITIONS**

You have a physician's orders and have performed a patient care handwash. Necessary materials and equipment: DD Form 792, SF 511, or other appropriate forms, calibrated graduated container, gloves, common serving items, urinal, bedpan, urinary drainage bag, emesis basin, and nasogastric drainage container.

**STANDARDS**

Accurately measure and record the patient's fluid intake and output on appropriate forms.

**TRAINING/EVALUATION***Training Information Outline*

1. Explain the procedure to the patient.
  - a. Inform the patient of the length of time during which the intake and output will be measured and the purpose of taking the measurements.
  - b. Tell the patient of any physician's orders on fluid intake, such as forcing fluids or restricting the amount of intake.
2. Tell the patient what types of items require intake and/or output measurement.
  - a. Intake measurement.
    - (1) Items that are naturally fluid at room temperature such as jello, ice cream, ice, and infant cereals.
    - (2) Fluids consumed with and between meals, such as water, coffee, tea, broth, juice, milk, milkshakes, and carbonated beverages.
    - (3) IV infusion fluids and blood.
    - (4) Oral liquid medications.
    - (5) Irrigating solutions that are not returned.

## STP 8-91B15-SM-TG

### b. Output measurement.

- (1) Urine.
- (2) Liquid stool.
- (3) Vomitus.
- (4) Drainage from wounds and suction devices.

3. Tell the patient to use specified containers, such as a bedpan or urinal, to save all fluid output.

### 4. Measure the intake.

#### a. Calculate the oral fluid intake.

*NOTE:* Check the water pitcher at the beginning and end of each shift. Check the meal tray for the amount of liquids consumed before removing it from the room.

- (1) Note the type and size of the oral fluid containers.
- (2) Check the container to find the fluid capacity.
- (3) Check the "Equivalents Table" on DD Form 792.

*NOTE:* If an unmarked container is not listed on DD Form 792, fill it with water and pour its contents into a graduate to check its capacity.

#### b. Calculate the amount of IV solution or blood given.

#### c. Calculate the amount of any irrigating solutions that are not returned, if applicable.

- (1) Subtract the amount of solution returned from the known amount used for the irrigating procedure.
- (2) Record the difference as intake.

5. Record, in cubic centimeters (cc), the fluid intake under the appropriate heading on DD Form 792.

*NOTE:* To convert ounces to cc, multiply the number of fluid ounces by 30. Example: 12 fluid ounces multiplied by 30 equals 360 cc. One milliliter (ml) is approximately equal to one cc.

### 6. Measure the output.

#### a. Put on gloves.



- b. Record the level of output (urine, liquid stool, or emesis) in a graduated container.

*NOTE:* If it is not possible to weigh or measure liquid stool, estimate the amount IAW local SOP. Estimate the amount of solid stool IAW local SOP.

- c. Estimate the amount of wound drainage, if present, IAW local SOP.
- d. Estimate any output not in a container, such as on the floor, skin, or sheets, IAW local SOP.
- e. Observe characteristics of the output.
  - (1) Color and odor of urine.
  - (2) Color, odor, and consistency of stool.
  - (3) Color and consistency of nasogastric drainage.

7. Remove gloves and perform a patient care handwash.

8. Record, in cc, the amount and characteristics of output under the appropriate headings on DD Form 792.

*NOTE:* If no output was available to measure, enter this information in the "Remarks" section of DD Form 792.

9. Compute accumulated intake and output totals at the end of the 24-hour period and record on the appropriate forms IAW local SOP.

### ***Evaluation Preparation***

*Setup:* If the performance of this task must be simulated for training and evaluation, premeasure at least two fluid items into common serving utensils. The soldier will use them as the remains of a patient's simulated intake. You may also partially empty a bag or bottle of intravenous (IV) solution and have the soldier calculate the amount of intravenous intake. Have at least two premeasured containers of simulated waste fluid to use for simulated output. Have the soldier explain steps 1 through 3 to you.

*Brief soldier:* Tell the soldier to measure and record the intake and output of a specified patient.

### ***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>
1. Explain procedures to the patient.	P      F
2. Tell the patient what types of items require intake and/or output measurement.	P      F

## STP 8-91B15-SM-TG

### Performance Measures

### Results

3. Tell the patient to use specific containers, such as a bedpan or urinal, to save all fluid.	P	F
4. Measure the intake.	P	F
5. Record, in cubic centimeters (cc), the fluid intake.	P	F
6. Measure the output.	P	F
7. Remove gloves and perform a patient care handwash.	P	F
8. Record, in cc, the amount and characteristics of output under the appropriate headings on DD Form 792.	P	F
9. Compute accumulated intake and output totals at the end of the 24-hour period and record on the appropriate forms IAW local SOP.	P	F

**REFERENCES:** None

081-833-0007

**ESTABLISH A STERILE FIELD****CONDITIONS**

You have performed a patient care handwash. Necessary materials and equipment: sterile packs, sterile drapes and towels, small solution basin, sterile liquids, sterile needles and syringes, sterile gloves, and a flat, clean, dry surface.

**STANDARDS**

Establish a sterile field. Add items and liquids without violating aseptic technique.

**TRAINING/EVALUATION***Training Information Outline*

1. Obtain sterile equipment and supplies IAW local SOP.
2. Select a flat, clean, dry surface.

*NOTE:* Choose a surface away from drafts, if possible.

3. Create a sterile field with a double-wrapped sterile package.
  - a. Lift the top flap of the sterile pack away from the body without crossing the hand or arm over the sterile field.
  - b. Lift the remaining flaps, one at a time, away from the center without crossing the hand or arm over the sterile field.
4. Add sterile items to the sterile field.

*NOTE:* The outer one-inch border of the sterile field is considered contaminated. Items that fall in that area are considered contaminated and should not be used. If an item rolls from the one-inch border onto the sterile field, the sterile field is considered contaminated and the procedure must be stopped immediately. The procedure must be repeated using a new sterile pack.

- a. Commercially prepacked items.
  - (1) Keeping the hands on the outside of the sterile wrapper, grasp the opening edge of the package.
  - (2) Carefully fold each end of the wrapper back toward the wrist.

## STP 8-91B15-SM-TG

- (3) Without contaminating the contents, drop them onto the sterile field.

*NOTE:* If the wrapper has been punctured or torn, the item is no longer sterile.

- b. Centralized Materiel Section (CMS) items (wrapped in double muslin wrappers).

- (1) Remove the outer wrapper.
- (2) Grasp the edge of the item being unwrapped, keeping the hand on the outside of the inner wrapper.
- (3) Fold each edge of the wrapper slowly back over the wrist of the hand holding the item.
- (4) Drop the item onto the sterile field.

### 5. Open sterile liquids.

*NOTE:* Liquids prepared in CMS are considered sterile if a vacuum release sound is heard when the bottle is opened. If there is no sound, the bottle is considered unsterile, and a new bottle must be obtained before continuing the procedure.

*NOTE:* Some commercially prepared bottles of sterile solution may not make a vacuum release sound.

- a. Remove the outer protective bottle seal, if necessary, and remove the cap.
- b. Hold the cap in one hand, or place the cap so the top rests on the table.

*NOTE:* The bottle rim and inside of the cap are considered sterile.

### CAUTION

Discard the sterile solution under any of the following conditions:

1. Anyone touches the bottle rim.
2. The lip of the bottle touches nonsterile items.
3. Someone touches the inside of the cap, or the part of the cap that touches the container is placed on the table.

### 6. Pour sterile liquids.

- a. Hold the bottle with the label against the palm.
- b. Pour a small amount of the liquid from the bottle into a waste receptacle.

- c. Hold the bottle about 6 inches above the container into which the liquid is to be poured.
- d. Slowly pour a steady stream to avoid splashing, thus preventing contamination.
- e. Replace the cap without contaminating the bottle.
- f. Write the date and time the bottle was opened and your initials on the label. Return the bottle to the storage area or discard it IAW local SOP.

*NOTE:* If the sterile field is contaminated at any time, the procedure must be stopped immediately. Repeat all steps using new sterile equipment.

### *Evaluation Guide*

Performance Measures	Results	
1. Obtain sterile equipment and supplies IAW local SOP.	P	F
2. Select a flat, clean, dry surface.	P	F
3. Create a sterile field with a double-wrapped sterile package.	P	F
4. Add sterile items to the sterile field.	P	F
5. Open sterile liquids.	P	F
6. Pour sterile liquids.	P	F
7. Do not violate aseptic technique.	P	F

**REFERENCES:** None

**081-833-0010**

**CHANGE A STERILE DRESSING**

**CONDITIONS**

You have performed a patient care handwash. Necessary materials and equipment: protective pad, scissors, forceps, gloves, basin, sponges, face mask, swabs, towels, tape, dressings, sterile cleaning solution, adhesive solvent, and handwashing facilities.

**STANDARDS**

Remove the dressing on a wound and clean and recover the wound with a secure, sterile dressing without violating aseptic technique.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Identify the patient.
2. Gather the equipment.
3. Prepare the patient.
  - a. Explain the procedure to the patient.
  - b. Expose the wound by moving the patient's clothing and folding the bed linens away from the wound area, if necessary.
  - c. Position the patient to provide maximum wound exposure.
  - d. Place a protective pad under the patient.
4. Prepare the work area.
  - a. Clear the bedside stand or table.
  - b. Cut the required tape strips and attach them where they are accessible.
5. Put on a mask and exam gloves.
6. Remove the outer dressing.

- a. Loosen the ends of the tape by peeling toward the wound while supporting the skin around the wound.

**WARNING**

Do not peel the tape away from the wound.

- b. Grasp the edge of the dressing and gently remove it from the wound.
  - c. Note any drainage, color, and odor associated with the dressing.
  - d. Discard the dressing and the gloves in a contaminated waste container.
7. Perform a patient care handwash.
  8. Establish a sterile field. (See task 081-833-0007.)
    - a. Open and place all sterile equipment and supplies on the sterile field.
    - b. Pour the sterile cleaning solution into a basin.
  9. Put on a mask and sterile gloves.
  10. Remove the inner dressings.
    - a. Using forceps, remove the dressings one at a time.
    - b. Note any drainage, color, and odor associated with the dressings.
    - c. Discard the dressings in a contaminated waste container.
    - d. Drop the forceps on the glove wrap.
  11. Check the wound for the following conditions.
    - a. Redness, swelling, foul odor, and/or bleeding.
    - b. Drainage that contains blood, serum, or pus (usually yellow but may be blood-tinged, greenish, or brown).

**CAUTION**

Notify the supervisor if any of the above conditions are present.

## STP 8-91B15-SM-TG

c. If drainage is present, seek permission from the physician to irrigate the wound. (See task 081-833-0012.)

12. Clean the wound with sterile gauze soaked with a sterile cleaning solution.

a. Linear wound.

(1) First stroke. Clean the area directly over the wound with one wipe and discard the gauze.

(2) Second stroke. Clean the skin area on one side next to the wound with one wipe and discard the gauze.

(3) Third stroke. Clean the skin area on the other side next to the wound with one wipe and discard the gauze.

(4) Continue the procedure alternating sides of the wound, working away from the wound until the area is cleaned.

b. Circular wound.

(1) First stroke. Start at the center of the wound, wipe the wounded area with an outward spiral motion, and then discard the gauze.

(2) Second stroke. Clean the skin area next to the wound using an outward spiral motion, approximately one and one half revolutions, and then discard the gauze.

(3) Using successive outward, spiral strokes of approximately one and one half revolutions, clean the entire area around the wound.

13. Change gloves.

14. Remove adhesive from around the wound, if necessary.

a. Using a solvent-soaked cotton tipped applicator or gauze pad, rub gently over the adhesive residue.

b. Observe the skin for signs of irritation.

15. Apply a sterile dressing.



- a. Lay the first dressing over the wound so that it extends over the edge.
- b. Overlap the first dressing with a second dressing.
- c. Overlap the second dressing with a third dressing.
- d. Cover all of the dressings with a large outer dressing.

*NOTE:* If the wound has a drain inserted, cut the dressing halfway through and position it around the drain.

16. Remove sterile gloves and face mask.

17. Secure the dressing with tape.

*NOTE:* The tape should not form a constricting band around the wound.

- a. Apply tape to the edge of the dressing with half of the tape on the dressing and the other half on the skin.
- b. Write the date and time the dressing was changed on a piece of tape, initial it, and secure the tape to the dressing.

18. Dispose of contaminated materials in a contaminated waste container.

19. Perform a patient care handwash.

20. Record the procedure on the appropriate form.

- a. Enter the date and time of the dressing change.
- b. Enter a description of the wound's appearance.
  - (1) Type and amount of drainage, if any.
  - (2) Characteristics of the wound before and after cleaning.

### ***Evaluation Preparation***

*Setup:* If the performance of this task must be simulated for training or evaluation, have another soldier act as the patient. A moulage kit or similar materials may be used to simulate an injury. Apply a dressing to the patient.

*NOTE:* For testing purposes, the dressing may be reused.

*Brief soldier:* Tell the soldier to change the patient's sterile dressing.

*Evaluation Guide*

**Performance Measures**

**Results**

*NOTE:* Under combat conditions, dressings are not normally changed but are reinforced. The second dressing is labeled "Reinforcement." The date and time and the medic's initials are written on the dressing.

**Performance Measures**

**Results**

1. Identify the patient.	P	F
2. Gather the equipment.	P	F
3. Prepare the patient.	P	F
4. Prepare the work area.	P	F
5. Put on a mask and exam gloves.	P	F
6. Remove the outer dressing.	P	F
7. Perform a patient care handwash.	P	F
8. Establish a sterile field.	P	F
9. Put on a mask and sterile gloves.	P	F
10. Remove the inner dressings.	P	F
11. Check the wound.	P	F
12. Clean the wound with sterile gauze soaked with a sterile cleaning solution.	P	F
13. Change gloves.	P	F
14. Remove adhesive from around the wound, if necessary.	P	F
15. Apply a sterile dressing.	P	F
16. Remove sterile gloves and face mask.	P	F
17. Secure the dressing with tape.	P	F
18. Dispose of contaminated materials in a contaminated waste container.	P	F

**Performance Measures**

**Results**

19. Perform a patient care handwash.

P     F

20. Record the procedure on the appropriate form.

P     F

21. Do not violate aseptic technique.

P     F

**REFERENCES:** None

**081-833-0012**

**PERFORM A WOUND IRRIGATION**

**CONDITIONS**

You have verified a physician's order to irrigate a wound. You have performed a patient care handwash. Necessary materials and equipment: protective pads, irrigating syringe, sterile gloves, mask, prescribed irrigating solution, sterile dressing, catch basin, sterile gauze sponges, and a sterile solution basin.

**STANDARDS**

Irrigate the wound without violating aseptic technique or causing further injury to the patient.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Identify the patient.
2. Explain the procedure to the patient.
3. Provide privacy, if possible, and position the patient to provide maximum wound exposure.
4. Place a protective pad directly under the wound area.
5. Prepare the irrigation equipment.
  - a. Establish a sterile field using the wrapper of the sterile solution basin.
  - b. Open and place all other sterile equipment and supplies on the sterile field.
  - c. Verify the prescribed irrigating solution and pour it into the sterile basin.
6. Put on a mask and exam gloves.
7. Remove the soiled outer dressing.
8. Remove the exam gloves.
9. Place a catch basin on the protective pad, against the body, to collect the used solution.
10. Put on sterile gloves.
11. Use sterile forceps to remove the inner dressings.

12. Irrigate the wound.

- a. Fill the irrigating syringe with solution from the sterile basin.
- b. Hold the tip of the syringe as close to the wound as possible without touching it. Depress the bulb or plunger, directing the flow of solution to all parts of the wound in a slow, steady stream.
- c. Repeat steps 12a and 12b until all of the solution is used, or the wound is clear of debris and/or drainage.
- d. Observe the drainage for blood or characteristics such as unusual color, odor, or consistency.

**CAUTION**

Use extra care when irrigating a wound in which an abscess has formed. Check all internal surfaces of the wound to inspect for "sinus tract" (resembles tunnels in which pus may be collected). This may require using the gloved hand or a sterile object to gently pull back the flesh. Be careful not to tear healing tissue.

13. Dry the wound and apply a sterile dressing.

- a. Pat the wound dry with sterile gauze sponges.
  - (1) Start at the center of the wound.
  - (2) Move outward toward the wound edges.
- b. Apply a sterile dressing to the wound. (See task 081-833-0010.)
- c. Remove the catch basin and protective pad, if they are still in place.

14. Remove the mask and gloves.

15. Reposition the patient for comfort, if necessary.

16. Clean and store the equipment IAW local SOP.

17. Perform a patient care handwash.

18. Record the procedure on the appropriate form.

***Evaluation Preparation***

*Setup:* If the performance of this task must be simulated for training or evaluation, have another soldier act as the patient. Designate a wound site or use a moulage kit or similar material to simulate an injury. Prepare a physician's order specifying the type and amount of solution to be used.

*Brief soldier:* Give the soldier the physician's order and tell the soldier to irrigate the wound.

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Identify the patient.	P	F
2. Explain the procedure to the patient.	P	F
3. Provide privacy, if possible, and position the patient to provide maximum wound exposure.	P	F
4. Place a protective pad directly under the wound area.	P	F
5. Prepare the irrigation equipment.	P	F
6. Put on a mask and exam gloves.	P	F
7. Remove the soiled outer dressing.	P	F
8. Remove the exam gloves.	P	F
9. Place a catch basin on the protective pad, against the body, to collect the used solution.	P	F
10. Put on sterile gloves.	P	F
11. Use sterile forceps to remove the inner dressings.	P	F
12. Irrigate the wound.	P	F
13. Dry the wound and apply a sterile dressing.	P	F
14. Remove the mask and gloves.	P	F
15. Reposition the patient for comfort, if necessary.	P	F
16. Clean and store the equipment IAW local SOP.	P	F

**Performance Measures**

**Results**

17. Perform a patient care handwash.	P	F
18. Record the procedure on the appropriate form.	P	F
19. Do not violate aseptic technique.	P	F
20. Do not cause further injury to the patient.	P	F

**REFERENCES:** None

**081-833-0021**

**PERFORM ORAL AND NASOTRACHEAL SUCTIONING OF A PATIENT**

**CONDITIONS**

A patient requires suctioning. You have identified the patient, explained the procedure, and performed a patient care handwash. Necessary materials and equipment: suction apparatus, suction catheter and tubing, "Y" adapter/connector, sterile saline, sterile solution basin, and sterile gloves.

**STANDARDS**

Perform oral or nasotracheal suctioning without violating aseptic technique or causing injury to the patient.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Position the patient in the semi-Fowler's (semi-sitting) position.

*NOTE:* In some cases, such as spinal injuries, the patient will have to remain in whatever position he or she is in at the time.

2. Check the pressure on the suction apparatus.
  - a. Turn the unit on, place a thumb over the end of the suction connecting tube, and observe the pressure gauge.
  - b. Ensure that the pressure reading is within the limits specified by local SOP and the recommendations of the equipment manufacturer.
  - c. Notify the supervisor if the pressure is not within the recommended limits.
  - d. Turn the unit off after verifying the correct pressure.

**WARNING**

If the suction pressure is too low, the secretions cannot be removed. If the pressure is too high, the mucous membranes may be forcefully pulled into the catheter opening.

3. Prepare the sterile materials. (See task 081-833-0007.)
  - a. Open the sterile solution basin package on the bedside stand or table to create a sterile field.



- b. Pour sterile saline solution into the basin.
- c. Open the suction catheter package to expose the suction port of the catheter.
- d. Open the sterile glove package.

*NOTE:* Disposable suctioning kits contain the same items as a sterile, single-use kit prepared by CMS.

**WARNING**

Some patients should not receive increased oxygen. If the patient has a respiratory disease, check with the supervisor or physician.

- 4. Oxygenate the patient (tracheal suctioning only).
  - a. If the patient is on oxygen therapy, increase the oxygen to 100% for one minute.
  - b. If the patient is not on oxygen therapy, have him or her take a minimum of five deep breaths or administer them with a bag-valve-mask. (See task 081-833-0017.)

*NOTE:* After each suctioning attempt or suctioning period, reoxygenate the patient.

- 5. Put on sterile gloves.
- 6. Remove the catheter from the package using the dominant hand, keeping the catheter coiled to prevent contamination.

*NOTE:* This hand must remain sterile.

- 7. Grasp the suction connecting tubing with the other hand. Attach the tubing to the catheter.

*NOTE:* This hand does not have to remain sterile. The glove is for your protection.

- 8. Test the patency of the catheter.
  - a. Turn the suction unit on with the nonsterile hand.
  - b. Insert the catheter tip into the sterile saline solution using the sterile hand.
  - c. Place the nonsterile thumb over the suction port to create suction. Observe the saline entering the drainage bottle.

## STP 8-91B15-SM-TG

*NOTE:* If no saline enters the bottle, check the suction unit and/or replace the catheter and retest for patency.

### 9. Suction the patient.

#### a. Oral route.

*NOTE:* Instruct the patient to cough, if he or she is able. This helps to bring secretions up to the back of the throat.

- (1) Insert the catheter into the patient's mouth, without suction applied.

*NOTE:* Hold the catheter with the sterile hand. Manipulate the suction connecting tubing and suction port with the nonsterile hand.

*NOTE:* If an oropharyngeal airway is in place, insert the catheter alongside the airway and then back into the pharynx.

- (2) Place the thumb of your nonsterile hand over the suction control port on the catheter.

- (3) Apply intermittent suction by moving your thumb up and down over the suction control port.

(4) Slowly and gently rotate the catheter between the thumb and index finger of your sterile hand as you withdraw the catheter.

### WARNINGS

1. Advancing the catheter too far into the back of the patient's throat may stimulate the gag reflex. This could cause vomiting and the aspiration of stomach contents.
2. Do not continue suctioning for more than 10 to 15 seconds because it removes oxygen as well as secretions. Longer periods of continuous suctioning may cause oxygen deprivation.

(5) Rinse the catheter between suctionings by inserting the tip into the saline solution. Suction the solution through the catheter until the catheter is clear of secretions.

(6) Repeat steps 9a(1) through 9a(5) until all secretions have been removed or until the patient's breathing becomes easier. Noisy, rattling, or gurgling sounds should no longer be heard.

- (7) Allow the patient to rest between each suctioning.

*NOTE:* If the patient is uncooperative, or oral entry is not possible due to injuries, nasopharyngeal suctioning may be required.

b. Nasopharyngeal route.

- (1) Measure the catheter from the tip of the earlobe to the nose (approximately five inches).
- (2) Lubricate the catheter by dipping the tip into the saline solution.
- (3) Insert the catheter into one nostril without applying suction. If an obstruction is met, try the other nostril. If both are obstructed, seek assistance.
- (4) Quickly and gently advance the catheter three to five inches.
- (5) Perform steps 9a(2) through 9a(7) to suction secretions.

c. Nasotracheal route.

*NOTE:* The nasotracheal route consists of the nose, pharynx, and trachea. This suctioning procedure is similar to nasopharyngeal suctioning, although deeper suctioning is accomplished.

- (1) Estimate the distance the catheter is to be inserted by measuring from the tip of the earlobe to the nose and then to the larynx.
- (2) Lubricate the catheter tip by dipping it into the saline solution.
- (3) If the patient is alert and cooperative, instruct the patient to flex the neck and stick out the tongue. This makes insertion easier and prevents swallowing.
- (4) Insert the catheter into one nostril. If an obstruction is met, try the other nostril. If both are obstructed, seek assistance.
- (5) Quickly and gently advance the catheter into the trachea.
- (6) Perform steps 9a(2) through 9a(7) to suction secretions.

**CAUTION**

If suctioning causes the patient to cough, remove the catheter until the coughing stops and then proceed.

10. Observe the patient for hypoxemia.

**WARNING**

Discontinue suctioning immediately if severe changes in color or pulse rate occur.

## STP 8-91B15-SM-TG

11. Disconnect the catheter and remove the gloves.
  - a. Hold the catheter in one hand.
  - b. Remove that glove by turning it inside out over the catheter to prevent the spread of contaminants.
  - c. Remove the other glove.
  - d. Discard them in contaminated trash.
12. Make the patient comfortable.
13. Discard or clean and store used items.
14. Record the procedure on the appropriate form.
  - a. Respirations (rate and breath sounds before and after suctioning).
  - b. Procedure (oral, nasopharyngeal, or nasotracheal).
  - c. Type and amount of secretions.
  - d. Patient's toleration of the procedure.

### *Evaluation Guide*

Performance Measures	Results	
1. Position the patient.	P	F
2. Check the pressure on the suctioning apparatus.	P	F
3. Prepare the sterile materials.	P	F
4. Oxygenate the patient, if necessary.	P	F
5. Put on sterile gloves.	P	F
6. Remove the catheter from the package.	P	F
7. Attach the suction connecting tube to the catheter.	P	F
8. Test the patency of the catheter.	P	F
9. Suction the patient.	P	F

**Performance Measures****Results**

10. Observe the patient for hypoxemia.	P	F
11. Disconnect the catheter and remove the gloves.	P	F
12. Make the patient comfortable.	P	F
13. Discard or clean and store used items.	P	F
14. Record the procedure on the appropriate form.	P	F
15. Do not violate aseptic technique.	P	F
16. Do not cause further injury to the patient.	P	F

**REFERENCES:** None

**PREPARE AN AREA FOR OPERATIVE TREATMENT**

**CONDITIONS**

You have performed a patient care handwash. Necessary materials and equipment: sponge basin, solution cup, 4 x 4 gauze pad, safety razor with blade, sterile saline or water, povidone-iodine solution, protective pad, aseptic syringe, and sterile gloves.

**STANDARDS**

Clean and shave the area without violating aseptic technique, patient safety, or hygienic principles.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Gather the equipment.
2. Prepare the patient.
  - a. Explain the procedure to the patient.
  - b. Position the patient to provide maximum wound exposure.
  - c. Place a protective pad under the area to be treated.

*NOTE:* Provide privacy by placing a screen or curtain around the patient or closing the door, if possible.

3. Expose the injury site.
  - a. Remove or cut away clothing, bandages, and dressings to provide maximum wound exposure.
  - b. Adjust the light, if used, on the area to be treated.
4. Perform a patient care handwash.
5. Prepare the prep set.
  - a. Remove the caps or stoppers from the solution bottles.
  - b. Open the outer wrapper of the prep set.
  - c. Glove one hand.

**CAUTION**

Do not allow the gloved hand to come in contact with unsterile items and keep the hand above the work surface.

**d. Open the inner wrapper with the gloved hand.**

- e. Using the ungloved hand, prepour a small amount of solution from each bottle into a trash receptacle.
  - f. Pour sterile saline into the basin and povidone-iodine into the solution cup and then replace the caps.
6. Glove the other hand.
7. Treat the wound.
- a. Irrigate the wound with generous amounts of the prescribed fluid using an irrigating syringe.

**CAUTION**

Never start irrigation except under the direct supervision of a physician. Irrigation may cause blood clots to wash away, and bleeding may occur.

- b. Clean the wound area.
  - (1) Place a sterile gauze pad over the wound and hold it in place.
  - (2) Clean the skin around the area using povidone-iodine solution.
  - (3) Clean a three to four inch area adjacent to the wound.
  - (4) Use gentle friction and a circular motion around the wound edges, working outward.

*NOTE:* Discard the gauze after each one and one half revolutions. Use additional fresh sterile gauze pads as required.

- c. Shave the wound area.

*NOTE:* Check with the physician or local SOP regarding the size of the area to be shaved.

- (1) Clip any long hair, if required.
- (2) Shave any visible hair at the wound edges or in the area cleaned.
- (3) Shave outward from the wound edges, pulling the skin taut and using short strokes.

## STP 8-91B15-SM-TG

*NOTE:* Do not shave or remove eyebrows unless directed by a physician.

- d. Repeat steps 7b(1) through 7b(4).
  - e. Rinse the area with sterile saline.
  - f. Blot the skin dry with sterile gauze.
  - g. Place sterile gauze over the wound and notify the physician.
- 8. Remove the gloves.
  - 9. Remove equipment and protective pads, being careful not to contaminate the clean area.
  - 10. Perform a patient care handwash.
  - 11. Record the procedure on the appropriate form.

### *Evaluation Guide*

Performance Measures	Results	
1. Gather the equipment.	P	F
2. Prepare the patient.	P	F
3. Expose the injury site.	P	F
4. Perform a patient care handwash.	P	F
5. Prepare the prep set.	P	F
6. Glove the other hand.	P	F
7. Treat the wound.	P	F
8. Remove the gloves.	P	F
9. Remove equipment and protective pads, being careful not to contaminate the clean area.	P	F
10. Perform a patient care handwash.	P	F
11. Record the procedure on the appropriate form.	P	F



**Performance Measures**

**Results**

12. Do not violate aseptic technique.

P      F

13. Do not cause further injury to the patient.

P      F

**REFERENCES:** None

**081-833-0059**

## **IRRIGATE AN OBSTRUCTED EAR**

### **CONDITIONS**

You have a physician's order to irrigate an obstructed ear. A patient care handwash has been performed. Necessary materials and equipment: irrigating syringe, catch basin, irrigating solution, towels, gauze sponges, and otoscope set.

### **STANDARDS**

Irrigate the obstructed ear until the obstructing material is removed from the external ear or until the prescribed amount of solution has been used. Perform the procedure without causing further injury to the patient.

### **TRAINING/EVALUATION**

#### *Training Information Outline*

1. Gather the irrigation equipment.

*NOTE:* Common solutions used to irrigate the ear include water, normal saline, hydrogen peroxide and water, and prescribed medication solution. Alcohol may be used to shrink vegetable matter and make it easier to expel. Oil may be used for other foreign bodies to make them slippery.

2. Warm and test the solution.

- a. Warm the solution to about body temperature (95° to 105° F) by placing the solution container in a container of warm water.

- b. Test the temperature of the solution by running a small amount of it on the inner wrist.

#### **CAUTION**

Cold solutions are not only uncomfortable but may cause dizziness or nausea as a result of stimulation of the equilibrium sensors in the semicircular canals.

3. Identify the patient and explain the procedure.

- a. Tell the patient that some discomfort may be experienced when the solution is instilled.
- b. Emphasize to the patient that he or she must remain as still as possible.

**CAUTION**

If the patient moves when the solution is instilled, the syringe may damage the ear canal or tympanic membrane.

4. Insert the otoscope speculum into the external ear canal.
  - a. Position the patient to allow a good view into the ear.
  - b. Tilt the patient's head toward the shoulder opposite the ear to be irrigated.
  - c. Straighten the external ear canal by gently pulling the outer ear upward and backward for an adult or downward and backward for a child.

*NOTE:* Use the largest speculum that will fit comfortably in the patient's ear.

- d. Turn on the otoscope light and insert the speculum just inside the opening of the ear.

*NOTE:* To avoid causing pain, the speculum should be inserted gently and not too far into the ear canal.

- e. View the ear canal by looking through the lens of the otoscope.

5. Check for abnormalities.

- a. Check the external ear canal for redness, swelling, drainage, or foreign bodies.
  - b. Check the tympanic membrane for any abnormal conditions.

*NOTE:* A normal eardrum is slightly cone-shaped, shiny, translucent, and pearly grey.

- (1) A blue, yellow, amber, red, or pink eardrum indicates disease or infection.
    - (2) A bulge in the eardrum indicates possible pus or fluid in the middle ear.
    - (3) A hole or tear indicates rupture of the tympanic membrane.

**CAUTION**

If an abnormal condition of the tympanic membrane is suspected, do not irrigate the ear. To do so could cause pain and carry debris or infectious discharge into the middle ear. Report the condition to the supervisor immediately.

## STP 8-91B15-SM-TG

6. Position the patient sitting or lying with the head slightly tilted toward the affected side.

*NOTE:* Do not tilt the head toward the unaffected side, as this interferes with the return of the irrigating solution.

7. Drape the patient's shoulder and upper arm area under the affected ear.
8. Clean the external ear and the entrance to the ear canal with 4 x 4 gauze sponges slightly moistened with the irrigating solution.

### WARNING

If a cotton-tipped applicator is used to clean the ear, make sure it does not stick far enough into the ear to rupture the tympanic membrane.

9. Fill the irrigating syringe.
10. Test the flow of solution from the syringe by expelling a small amount back into the solution container.
11. Position the catch basin firmly against the neck just under the affected ear.
12. Straighten the external ear canal by gently pulling the outer ear upward and backward for an adult or downward and backward for a child.
13. Irrigate the patient's ear.
  - a. Place the tip of the irrigating syringe just inside the ear, with the tip directed toward the roof of the ear canal.

### WARNING

Never allow the syringe to completely block the ear canal. If space is not left around the tip, the solution will not be able to return, and undue pressure will build up in the canal.

- b. Depress the bulb or plunger of the syringe.
    - (1) Direct a slow, steady stream of solution against the roof of the ear canal.
    - (2) Repeat the procedure until the foreign body is removed, the solution returns free of wax or debris, or the proper amount of solution has been used.
14. Remove the catch basin and dry the external ear with a gauze sponge.

15. Instruct the patient to continue tilting the head toward the affected side for a few minutes to allow any remaining solution to drain from the ear.
16. Remove the drapes from the patient.
17. Dispose of, or clean and store the equipment.
18. Perform a patient care handwash.
19. Document the procedure on the appropriate forms IAW local SOP.
  - a. Type and amount of solution used.
  - b. Nature of return flow.

### *Evaluation Guide*

#### **Performance Measures**

#### **Results**

1. Gather the irrigation equipment.	P	F
2. Warm and test the solution.	P	F
3. Identify the patient and explain the procedure.	P	F
4. Insert the otoscope speculum into the external ear canal.	P	F
5. Check for abnormalities.	P	F
6. Position the patient.	P	F
7. Drape the patient's shoulder and upper arm area under the affected ear.	P	F
8. Clean the external ear and the entrance to the ear canal.	P	F
9. Fill the irrigating syringe.	P	F
10. Test the flow of solution.	P	F
11. Position the catch basin.	P	F
12. Straighten the external ear canal.	P	F
13. Irrigate the patient's ear.	P	F

## **STP 8-91B15-SM-TG**

### **Performance Measures**

### **Results**

14. Remove the catch basin and dry the external ear.	P	F
15. Instruct the patient to continue tilting the head toward the affected side.	P	F
16. Remove the drapes from the patient.	P	F
17. Dispose of or clean and store the equipment.	P	F
18. Perform a patient care handwash.	P	F
19. Document the procedure on the appropriate forms IAW local SOP.	P	F
20. Do not cause further injury to the patient.	P	F

**REFERENCES:** None

081-833-0016

**INSERT AN OROPHARYNGEAL AIRWAY (J TUBE)****CONDITIONS**

You are surveying an unconscious casualty who requires insertion of an oropharyngeal airway. Necessary materials and equipment: three sizes of oropharyngeal airways, gloves, and gauze pads or tongue blades.

**STANDARDS**

Insert the correct size of oropharyngeal airway and make it functional without causing further injury to the casualty.

**TRAINING/EVALUATION***Training Information Outline***WARNING**

Use an oropharyngeal airway for an unconscious casualty only. Do not use it on a conscious or semiconscious casualty because he or she may still have a gag reflex.

1. Select the correct size of airway.
  - a. Position the casualty's jaw in a normal closed mouth position.
  - b. Place the airway beside the outside of the casualty's jaw.
  - c. Ensure that the airway reaches from the corner of the casualty's mouth to the ear lobe.

*NOTE:* The measurement from the ear lobe to the corner of the casualty's mouth is equivalent to the depth of insertion in the airway.

2. Perform head-tilt/chin-lift to open the airway. (See task 081-831-0018.)

**WARNING**

If a neck or spinal injury is suspected, use the jaw thrust method to open the airway.

3. Open the casualty's mouth.

**WARNING**

Wear gloves for self-protection against transmission of contaminants whenever handling body fluids.

- a. Place the crossed thumb and index finger of one hand on the casualty's upper and lower teeth at the corner of the mouth.
- b. Use a scissors motion to pry the casualty's teeth apart.

*NOTE:* If the teeth are clenched, wedge the index finger behind the casualty's back molars to open the mouth.

4. Insert the airway.

- a. Place the tip end of the airway into the casualty's mouth over the tongue.
- b. Point the tip up toward the roof of the mouth.
- c. Slide the J tube along the roof of the mouth. Follow the natural curvature of the tongue past the soft palate.
- d. Rotate the airway 180° as the tip reaches the back of the tongue.

*NOTE:* The airway may be difficult to insert. If so, use a gauze pad to pull the tongue forward or a tongue blade to depress the tongue.

- e. Gently advance the airway and adjust it so the flange rests on the casualty's lips.

*NOTE:* The tip of the airway should rest just above the epiglottis.

*NOTE:* If the flange of the airway did not seat correctly on the lips or if the casualty gags, the airway may be the wrong size. Repeat the procedure using a different airway.

**WARNING**

If the casualty starts to regain consciousness and gags or vomits, remove the airway immediately.

5. Evacuate the casualty.



*NOTE:* The airway may need to be taped or tied in place to avoid dislodgement during evacuation. If so, the casualty must be constantly monitored for the return of consciousness.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, use a CPR mannequin capable of accepting an oropharyngeal airway.

*Brief soldier:* Tell the soldier that the simulated casualty is unconscious and breathing. Tell the soldier to insert an oropharyngeal airway.

### ***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Select the correct size of airway.	P	F
2. Perform head-tilt/chin-lift. (See task 081-831-0018.)	P	F
3. Open the casualty's mouth.	P	F
4. Insert the airway.	P	F
5. Evacuate the casualty.	P	F
6. Do not cause further injury to the casualty.	P	F

**REFERENCES:** None

081-833-0017

**VENTILATE A PATIENT WITH A BAG-VALVE-MASK SYSTEM****CONDITIONS**

Necessary materials and equipment: oropharyngeal airway, a bag-valve-mask (BVM) system, and oxygen (if available).

**STANDARDS**

Ventilate the patient with a bag-valve-mask system until spontaneous breathing returns, until a normal rate and depth of respiration is achieved, or until directed to stop by a physician. Perform the procedure without causing further injury to the patient.

**TRAINING/EVALUATION***Training Information Outline*

1. Insert an oropharyngeal airway, if the patient is unconscious. (See task 081-833-0016.)

**WARNING**

Do not attempt to use an oropharyngeal airway on a conscious or semiconscious patient.

2. Assemble the BVM, selecting the correct size of mask for the patient.
  3. Ensure that the bag is operational.
  4. Kneel behind the patient's head facing the patient's feet.
  5. Fit the mask to the patient.
    - a. Stretch the mask with the thumb and finger on both sides of the mask.
    - b. Place the mask over the patient's face with the apex of the mask over the bridge of the patient's nose and the base of the mask in the groove between the lower lip and the chin to form a tight seal.
- NOTE:* As the stretched mask resumes its original shape, pull the patient's skin taut to help form a leakproof seal.
6. Hold the mask in place with one hand.
    - a. Place the little, ring, and middle fingers along the mandible.

- b. Place the thumb on the upper portion of the mask above the valve connection.
- c. Place the index finger on the lower portion of the mask under the valve connection.

*NOTE:* Use the other hand to squeeze the bag.

- d. Use firm pressure to hold the mask in position and to maintain the airway.
7. Ventilate the patient.
- a. Squeeze the bag twice to administer two full breaths.
  - b. Maintain a leakproof mask seal with the other hand.
8. Observe the rise and fall of the patient's chest.
- a. If the chest does not rise, reposition the airway.
  - b. If the chest rises and falls, continue with step 9.
9. Continue ventilations.
- a. Squeeze the bag once every five seconds to achieve a rate of 12 ventilations per minute. (See Figure 3-2.)



Figure 3-2

(1) When the system is used to assist a spontaneously breathing patient, synchronize the ventilations with the patient's inhalations. Attempt to attain a more normal rate and depth of respiration.

(2) When this system is used in conjunction with external chest compressions, squeeze the bag between the fifth upstroke and the next downward stroke without interrupting the rhythm of external chest compressions.

b. Check the pulse.

c. Observe for vomiting or secretions in or around the mouth or mask.

*NOTE:* An oxygen source may be attached to the mask.

10. Continue ventilations until spontaneous breathing returns, until a more normal rate and depth of respiration is achieved, or until directed to stop by a physician.

11. Record the procedure on the appropriate form.

12. Evacuate the patient.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, use a CPR mannequin capable of accepting an oropharyngeal airway. If oxygen will be used, prepare the oxygen source. Tell the soldier if oxygen is to be used and whether the patient is conscious or unconscious.

*Brief soldier:* Tell the soldier to ventilate the patient with a bag-valve-mask system. After two minutes of ventilation, tell the soldier that the patient has resumed normal breathing.

### ***Evaluation Guide***

#### **Performance Measures**

#### **Results**

1. Insert an oropharyngeal airway, if the casualty is unconscious.	P	F
2. Assemble the BVM, selecting the correct size of mask for the patient.	P	F
3. Ensure that the bag is operational.	P	F
4. Kneel behind the patient's head facing the patient's feet.	P	F
5. Fit the mask to the patient.	P	F
6. Hold the mask in place with one hand.	P	F

**Performance Measures****Results**

7. Ventilate the patient.	P	F
8. Observe the rise and fall of the patient's chest.	P	F
a. If the chest does not rise, reposition the airway.		
b. If the chest rises and falls, continue with step 9.		
9. Continue ventilations.	P	F
10. Continue ventilations until spontaneous breathing returns, until a more normal rate and depth of respiration is achieved, or until directed to stop by a physician.	P	F
11. Record the procedure on the appropriate form.	P	F
12. Evacuate the patient.	P	F
13. Do not cause further injury to the patient.	P	F

**REFERENCES:** None

081-830-3000

**PREPARE A MEDICAL GAS CYLINDER FOR PATIENT USE****CONDITIONS**

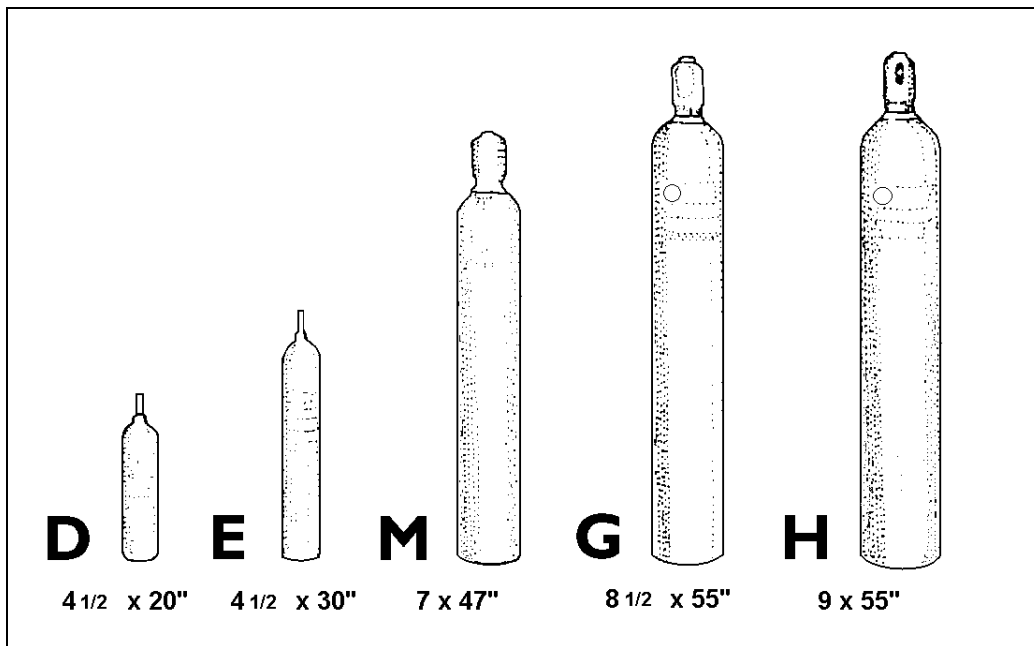
A patient care handwash has been performed. Necessary materials and equipment: full gas cylinders, nonsparking cylinder wrench, cylinder regulators, flowmeters for E and M cylinders, yoke attachment, humidifier, sterile water, gas therapy device, and warning signs.

**STANDARDS**

Set up the gas cylinder without violating safety precautions or endangering patients or self.

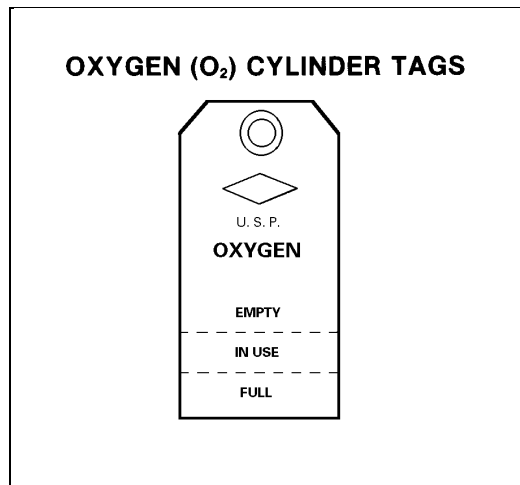
**TRAINING/EVALUATION***Training Information Outline*

1. Obtain the necessary equipment.
  - a. Gas cylinder. (See Figure 3-3.)



**Figure 3-3**

(1) Check the gas cylinder tag to determine whether the tank is "FULL", "IN USE" (partially full), or "EMPTY." (See Figure 3-4.)



**Figure 3-4**

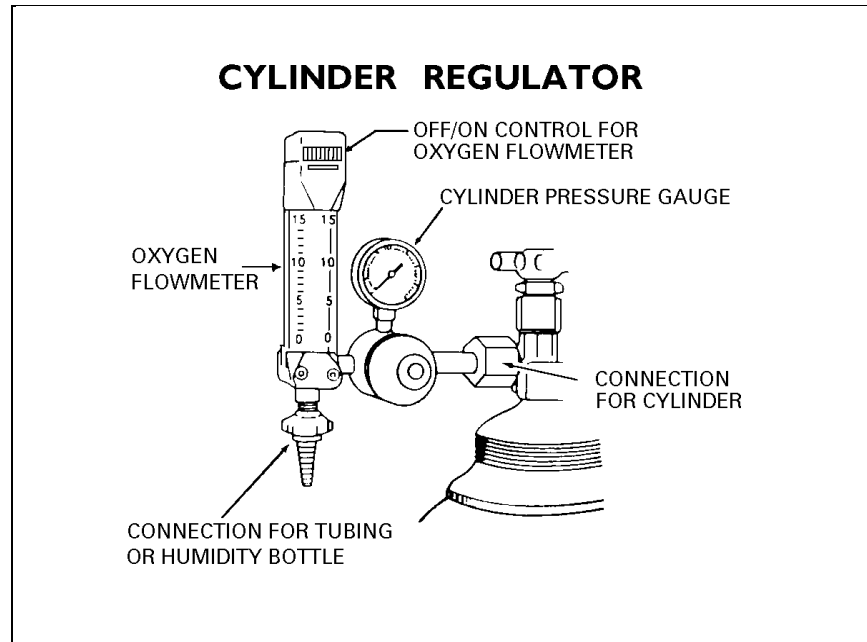
(2) Always ensure that the gas cylinder selected corresponds with the appropriate color code. (See Figure 3-5.)

<b>Gas</b>	<b>Color</b>
Oxygen	Green
Carbon dioxide	Gray
Nitrous oxide	Light blue
Cyclopropane	Orange
Helium	Brown
Ethylene	Red
Carbon dioxide and oxygen	Gray and green
Helium and oxygen	Brown and green
Air	Yellow (black, military use only)

**Figure 3-5**

(3) Verify the cylinder's contents by carefully reading its label.

- b. Cylinder regulator with flowmeter. (See Figure 3-6.)



**Figure 3-6**

*NOTE:* The function of a regulator is to reduce a high pressure gas source to a low working pressure and maintain a constant working pressure as the flow rate is changed. The function of a flowmeter is to regulate or control the flow rate of a gas.

*NOTE:* When the cylinder regulator pressure gauge reads 200 psi, the gas cylinder is considered empty.

*NOTE:* The uncompensated Thorpe-tube flowmeter may give false low readings in the presence of back pressure and is affected by gravity and therefore must be kept in the vertical position. The compensated Thorpe-tube flowmeter is also affected by gravity but not affected by back pressure. The Bourdon gauge flowmeter is not affected by gravity; however, it may give false high readings in the presence of back pressure.

- c. Humidifier.
- d. Sterile water.
- e. Nonsparking cylinder wrench.
- f. Gas cylinder transport carrier and/or stand.
- g. Gas delivery system ordered by the physician.



- h. "OXYGEN IN USE" sign.

**CAUTION**

Because of the extreme pressure in gas cylinders, they should be handled with great care. Do not allow cylinders to be banged together, dropped, or knocked over.

2. Secure and position the gas cylinder.
  - a. Place the tank in an upright position or IAW local SOP.
  - b. Secure the tank with straps or place the tank in a stand.
  - c. Keep the tank away from door openings and areas of high traffic.

3. Remove the cylinder valve cap.

*NOTE:* The cylinder valve cap may be noisy or difficult to remove. However, the threads of the cylinder cap should never be oiled.

4. Use either the handwheel or a nonsparking wrench to "crack" (slowly open and quickly close) the cylinder to flush out any debris.

**CAUTION**

The cylinder outlet valve must point away from you and anyone in the area.

5. Attach the regulator to the cylinder.

*NOTE:* The indexed connector systems used for medical gas cylinders are the Diameter Index Safety System (DISS) for M, G, and H cylinders and the Pin Index Safety System (PISS) for E and D cylinders.

- a. M, G, and H cylinders.
  - (1) Hold the gauge in an upright position.
  - (2) Insert the cylinder regulator inlet into the gas cylinder's threaded outlet in an upright position.
  - (3) Hand-tighten the inlet nut, located on the cylinder regulator, and then completely tighten the inlet nut with a nonsparking wrench. (See Figures 3-7 and 3-8.)

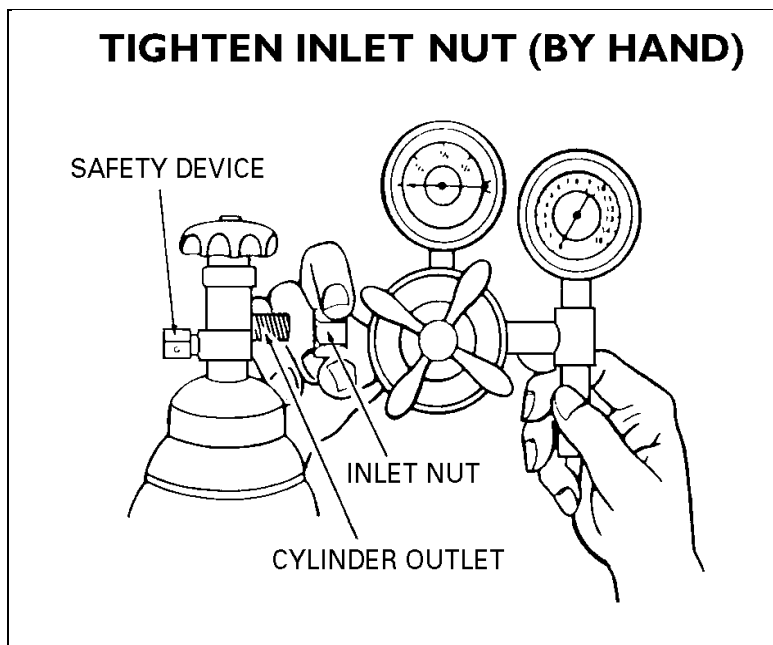


Figure 3-7

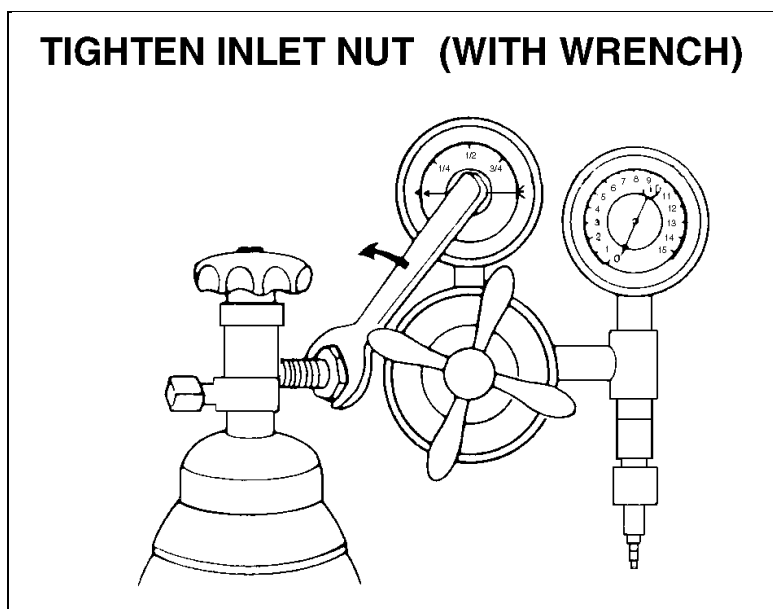


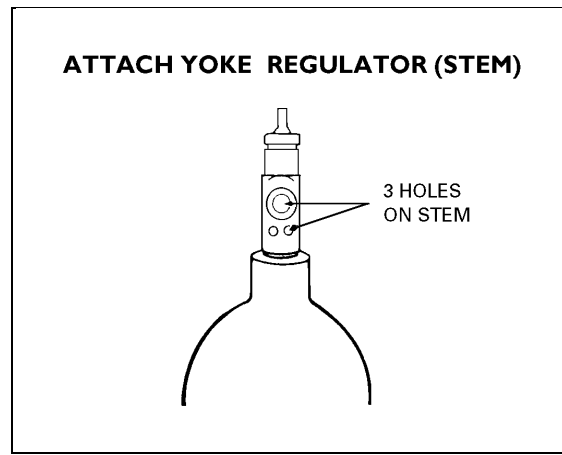
Figure 3-8

- (4) Open the valve to test for leaks, and then close it.

*NOTE:* If there is a leak, check the regulator connection and obtain a new regulator and/or cylinder, if necessary.

- b. D or E cylinders.

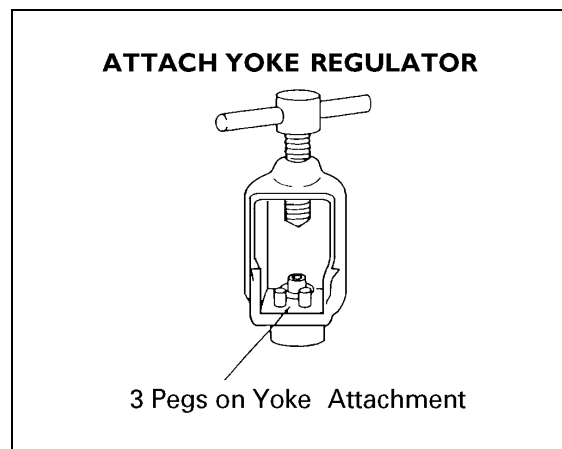
- (1) Locate the three holes on the gas cylinder stem and ensure that an "O" ring is present. (See Figure 3-9.)



**Figure 3-9**

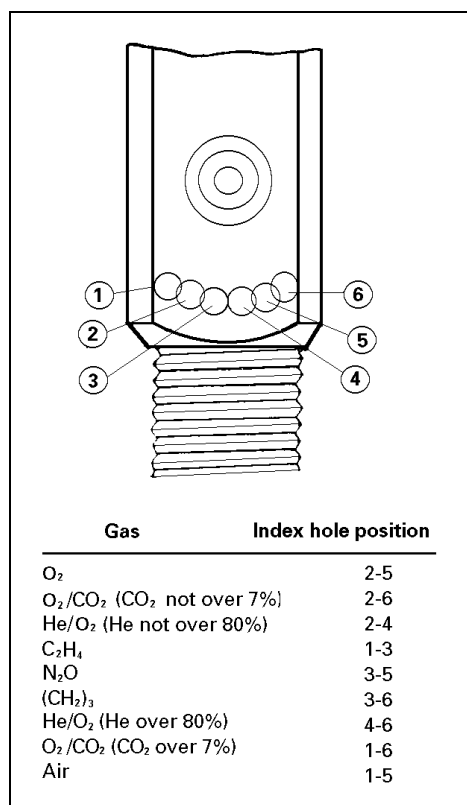
*NOTE:* If the "O" ring is not present, a gas leak will occur.

- (2) Examine the yoke attachment and locate the three corresponding pegs on the yoke attachment. (See Figure 3-10.)



**Figure 3-10**

(3) Slide the yoke attachment over the cylinder stem and ensure that the pegs are seated in the proper holes. (See Figure 3-11.)



**Figure 3-11**

(4) Turn the vise-like screw on the side of the yoke attachment to secure it.

(5) Open the valve to test for leaks, and then close it.

**NOTE:** If there is a leak, check the regulator connection and obtain a new regulator and/or cylinder, if necessary.

6. Attach the appropriate gas therapy device.

7. Calculate the duration of flow of the gas cylinder.

a. Determine the pressure in the cylinder by reading the regulator gauge.

b. Determine the safe residual level of the gas cylinder.

*NOTE:* The safe residual level is the level of gas at which the cylinder should be replaced. This level has been established to be 200 pounds per square inch (psi).

c. Determine the available cylinder pressure by subtracting the safe residual level from the cylinder pressure. Example: 2000 psi in a cylinder. 2000 psi cylinder pressure minus 200 psi safe residual level = 1800 psi available pressure.

d. Determine the conversion factor for the gas cylinder in use.

*NOTE:* Each type of gas cylinder, depending on its size, employs a specific conversion factor.

(1) D size gas cylinder--0.16.

(2) E size gas cylinder--0.28.

(3) G size gas cylinder--2.41.

(4) H size gas cylinder--3.14.

(5) M size gas cylinder--1.56.

e. Determine the available liters by multiplying the conversion factor by the amount of available pressure. Example: A "D" size cylinder is being used. A .16 conversion factor x 1800 psi available pressure = 288 liters of gas available for use.

f. Obtain the flow rate as prescribed by the physician's order.

g. Determine the duration of the gas by dividing the available liters by the flow rate. Example: 288 available liters divided by the prescribed flow rate of 10 lpm = 28.8 (29) minutes duration of gas flow.

8. Document the completion of the procedure.

### *Evaluation Guide*

Performance Measures	Results	
1. Obtain the necessary equipment.	P	F
2. Secure and position the gas cylinder.	P	F
3. Remove the cylinder valve cap.	P	F
4. "Crack" the cylinder to flush out any debris.	P	F
5. Attach the regulator to the cylinder.	P	F

**Performance Measures**

6. Attach the appropriate gas therapy device.
7. Calculate the duration of flow of the gas cylinder.
8. Document the completion of the procedure.

**Results**

P	F
P	F
P	F

**REFERENCES:** None

**081-833-0019**

**ADMINISTER OXYGEN THERAPY USING A FACE MASK OR NASAL PRONGS**

**CONDITIONS**

You have a physician's order to administer oxygen therapy. A patient care handwash has been performed. Necessary materials and equipment: oxygen tank, pressure gauge, flowmeter, water, extension tubing, face mask, nasal prongs, and humidifier.

**STANDARDS**

Administer oxygen therapy using a face mask or nasal prongs to assist patient breathing without causing further injury to the patient. Calculate the duration of flow of the oxygen cylinder accurately.

**TRAINING/EVALUATION**

***Training Information Outline***

1. Check the physician's order to determine the flow rate and delivery device.

*NOTE:* If the delivery device is not specified, the rate of flow will determine the method to deliver oxygen.

- a. Use nasal prongs if the flow rate is from 2 liters per minute (L/M) through 6 L/M.
- b. Use the face mask if the flow rate is 7 L/M or more.

*NOTE:* For an unconscious patient, use a face mask only when an artificial airway is in place.

2. Identify the patient and explain the procedure.
  - a. Show the delivery device to the patient.
  - b. Explain the procedure and answer the patient's questions.
3. Prepare the equipment. (See task 081-833-0018.)
4. Perform a patient care handwash.
5. Place the patient in a semi-sitting position.
6. Apply the administration device.
  - a. Nasal prongs.

- (1) Attach the tubing to the humidifier and start the flow of oxygen.
- (2) Position the prongs so that the tips do not extend more than 2 1/2 cm (1 inch) into the patient's nose.
- (3) Adjust the oxygen flow to the prescribed rate.
- (4) Secure the headband/retaining strap comfortably for the patient.
- (5) Ensure that the nasal prongs are held in place.
- (6) Fasten the tubing to the pillow or clothing.

b. Face mask.

- (1) Select the correct size of mask and demonstrate proper placement to the patient.
- (2) Attach the tubing to the humidifier.
- (3) Start the oxygen flow and adjust it to the prescribed rate.

*NOTE:* Start the oxygen at the prescribed rate before placing the mask over the patient's nose and mouth. The patient will be less apprehensive if oxygen is already coming through the mask.

- (4) Adjust the mask over the mouth and nose and instruct the patient to breathe normally.
- (5) Secure the headband/retaining strap comfortably for the patient.
- (6) Ensure that the face mask is held in place.

7. Record the time the treatment was started, the method of administration, the rate of flow, and the patient's response.

8. Check the patient and equipment IAW physician's orders and/or local SOP.

a. Patient. Check for confusion, restlessness, level of consciousness, color, and changes in pulse, respirations, and blood pressure.

b. Equipment. Check the security of tubing connections and administration device, oxygen flow rate, and humidifier water level.

*NOTE:* Change the cannula, humidifier, and tubing every 24 hours or more often IAW local SOP.

9. Calculate the duration of flow of the oxygen cylinder.



- a. Determine the remaining pressure in the tank by reading the regulator gauge.
- b. Determine the safe residual level of the oxygen tank.

*NOTE:* The safe residual level is the level of oxygen at which the tank should be replaced. This level has been established to be 200 pounds per square inch (psi).

c. Determine the available cylinder pressure by subtracting the safe residual level from the remaining pressure. Example: 2000 psi remain in a tank. 2000 psi remaining pressure minus 200 psi safe residual level = 1800 psi available pressure.

- d. Determine the conversion factor for the oxygen cylinder in use.

*NOTE:* Each type of oxygen cylinder, depending on its size, employs a specific conversion factor.

- (1) D size oxygen cylinder -- 0.16.
- (2) E size oxygen cylinder -- 0.28.
- (3) G size oxygen cylinder -- 2.41.
- (4) H size oxygen cylinder -- 3.14.
- (5) M size oxygen cylinder -- 1.56.

e. Determine the available liters by multiplying the conversion factor by the amount of available pressure. Example: A "D" size cylinder is being used. A .16 conversion factor x 1800 psi available pressure = 288 liters of oxygen available for use.

- f. Determine the flow rate as prescribed by the physician's order.

g. Determine the duration of the oxygen by dividing the available liters by the flow rate. Example: 288 available liters divided by the prescribed flow rate of 10 L/M = 28.8 (29) minutes duration of oxygen flow.

10. Follow safety precautions.

- a. Post "OXYGEN" and "NO SMOKING" signs wherever oxygen is used or stored.
- b. Inform the patient and visitors about the restrictions.

**WARNING**

The chief danger in using oxygen is fire. The presence of oxygen in increased concentrations makes all materials more combustible. Things that burn slowly in ordinary air will burn violently and even explosively in the presence of oxygen.

- c. Use only nonsparking wrenches on tanks.
- d. Ensure all electrical equipment is properly grounded.
- e. Position oxygen cylinders away from doors and high traffic areas.
- f. Do not use oil or grease around oxygen fittings.
- g. Secure oxygen cylinders in an upright position.

***Evaluation Preparation***

*Setup:* If the performance of this task must be simulated for training and evaluation, have another soldier act as the patient.

*Brief soldier:* Tell the soldier to administer oxygen therapy using the physician's order.

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Check the physician's order to determine the flow rate and delivery device.	P	F
2. Identify the patient and explain the procedure.	P	F
3. Prepare the equipment.	P	F
4. Perform a patient care handwash.	P	F
5. Place the patient in a semi-sitting position.	P	F
6. Apply the administration device.	P	F
7. Record the time the treatment was started, the method of administration, the rate of flow, and the patient's response.	P	F

**Performance Measures****Results**

- |   |   |   |
|---|---|---|
| 8. Check the patient and equipment IAW physician's orders and/or local SOP. | P | F |
| 9. Calculate the duration of flow of the oxygen cylinder.                   | P | F |
| 10. Follow safety precautions.  | P | F |
| 11. Do not cause further injury to the patient.                             | P | F |

**REFERENCES:** None

**081-833-0032**

**OBTAIN A BLOOD SPECIMEN USING A VACUTAINER**

**CONDITIONS**

Necessary materials and equipment: blood specimen tubes, constricting band, vacutainer adapter, vacutainer needles, disinfectant pads, sterile 2 x 2 gauze sponges, betadine or alcohol, adhesive bandage strips, protective pad, labels, and gloves.

**STANDARDS**

Obtain a blood specimen without causing injury to the patient or violating aseptic technique.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Verify the request to obtain a blood specimen. Select the proper blood specimen tube for the test to be performed.
2. Label the blood specimen tube with the information necessary to identify the patient.
3. Perform a patient care handwash.

**WARNING**

Gloves should be worn for self-protection against transmission of contaminants whenever handling body fluids.

4. Assemble the vacutainer adapter, the needle, and the blood specimen tube.
  - a. Inspect the needle for nicks or barbs. Replace the needle if it is flawed or dull.
  - b. Insert the rubber stoppered end of the specimen tube into the vacutainer holder and advance the tube until it is even with the guideline.

*NOTE:* The needle is now partially imbedded into the stopper. If the tube is pushed beyond the guideline, the vacuum of the tube may be broken.

5. Identify the patient.
  - a. Ask the patient his or her name and compare the name to the bed card and identification band or tags.

b. If the specimen is being obtained from an outpatient, identify the patient by asking his or her name and comparing the name with the medical records or the laboratory request.

*NOTE:* Ask the patient about allergies to such things as iodine or alcohol.

6. Explain the procedure and purpose for collecting the blood specimen to the patient.

7. Position the patient.

a. Assist the patient into a comfortable sitting or lying position.

### **WARNING**

Never attempt to draw blood from a standing patient.

b. The patient should be positioned so the arm is well supported and stabilized by using a pillow, table, or other flat surface.

c. Place a protective pad under the elbow and forearm.

8. Expose the area for venipuncture.

9. Select and palpate one of the prominent veins in the bend of the arm (antecubital space).

a. The first choice is the median cubital vein. It is well supported and least apt to roll.

b. The second choice is the cephalic vein.

c. The third choice is the basilic vein. Although it is often the most prominent, it tends to roll easily and makes venipuncture difficult.

### **WARNINGS**

1. Avoid veins that are infected, irritated, injured, or have an IV running distal to the proposed venipuncture site.

2. Do not use the vacutainer to draw blood from small or fragile veins, because this can cause the vein walls to collapse. Use a needle and syringe instead.

10. Prepare the sponges for use.

a. Open the betadine or alcohol and 2 x 2 gauze sponge packages.

b. Place them within easy reach (still in the packages).

## STP 8-91B15-SM-TG

11. Apply the constricting band with enough pressure to stop venous return without stopping the arterial flow (a radial pulse will be present).

- a. Wrap latex tubing around the limb approximately 2 inches above the proposed venipuncture site.
- b. Stretch the tubing slightly and pull one end so that it is longer than the other.
- c. Form a loop with the longer end and draw the loop under the shorter end so that the tails of the tubing are turned away from the proposed site.

*NOTE:* If a commercial band is used, wrap it around the limb as in step 11a and then secure the band by overlapping the Velcro ends.

- d. Instruct the patient to form a fist, clench and unclench several times, and then hold the fist in a clenched position.

12. Palpate the selected vein lightly with the index finger, moving an inch or two in either direction so that the size and direction of the vein can be determined. The vein should feel like a spongy tube.

13. With a disinfectant soaked pad, cleanse the area around the puncture site using an outward circular motion.

### CAUTION

After cleansing the skin, do not repalpate the area.

### WARNING

Do not leave the constricting band on for more than two minutes.

14. Prepare to puncture the vein.

- a. Grasp the vacutainer unit and remove the protective needle cover.
- b. Position the needle directly in line with the vein. Using the free hand, grasp the patient's arm below the expected point of entry.
- c. Place the thumb of the free hand approximately 1 inch below the expected point of entry and pull the skin taut toward the hand.

15. Puncture the vein.

- a. Place the needle, bevel up, in line with the vein and pierce the skin at a 15 to 30 degree angle.
- b. Decrease the angle until the needle is almost parallel to the skin surface. Direct it toward the vein and pierce the vein wall.

*NOTE:* A faint "give" will be felt when the vein is entered, and blood will appear in the hub of the needle.

- (1) If the venipuncture is unsuccessful, pull the needle back slightly (not above the skin surface) and attempt to pierce the vein again.

**CAUTION**

If the needle is withdrawn above the skin surface, quickly release the constricting band and stop the procedure. Begin again with a new needle.

- (2) If the venipuncture is still unsuccessful, release the constricting band, place a gauze sponge lightly over the site, quickly withdraw the needle, and immediately apply pressure to the site.

- (3) Notify the supervisor before attempting to enter another vein.

- c. Instruct the patient to unclench the fist.

16. Collect the specimen.

- a. Single specimen sample.

- (1) With the dominant hand, hold the vacutainer unit and the needle steady.

- (2) Place the index and middle fingers of the free hand behind the flange of the vacutainer and ease the tube as far forward as possible. Blood will enter the tube.

**WARNING**

If the unit and needle are not held steady while pushing in the tube, the needle may either slip out of the vein or puncture the opposing vein wall.

- (3) After the tube is approximately two-thirds full of blood or the flow of blood stops, prepare to withdraw the needle.

## STP 8-91B15-SM-TG

b. Multiple specimen samples (multiple tubes).

- (1) Follow steps 16a(1) and 16a(2) for collecting a single specimen.
- (2) Remove the first tube and insert another tube into the vacutainer.
- (3) Repeat this procedure until the desired number of tubes are filled or blood stops flowing.
- (4) Release the constricting band using the nondominant hand.

(5) After the last tube is approximately two-thirds full of blood or the flow stops, prepare to withdraw the needle.

*NOTE:* If the blood flow starts to slow down between samples, remove the constricting band.

17. Withdraw the needle.

a. Release the constricting band by pulling on the long, looped end of the tubing or pulling the Velcro fasteners open.

### WARNING

Never withdraw the needle prior to removing the constricting band because this will cause blood to be forced out of the venipuncture site with resulting blood loss and/or hematoma formation.

b. Place a gauze sponge lightly over the venipuncture site.

c. Keeping the patient's arm fully extended, withdraw the needle smoothly and quickly. Immediately apply firm manual pressure over the venipuncture site with the sponge.

d. Instruct the patient to elevate the arm slightly and keep the arm fully extended. Continue to apply firm manual pressure to the site for two to three minutes.

18. Remove the specimen tube from the vacutainer.

a. Replace the protective cover over the needle.

*NOTE:* Dispose of the uncapped needle IAW local SOP.

### WARNING

If accidentally punctured by a used needle, force the puncture site to bleed, wash it thoroughly, and report the incident to your supervisor immediately.



- b. Pull the tube from the vacutainer.
  - c. If the tube contains an anticoagulant, gently invert the tube several times to mix it with the blood.
19. Apply an adhesive bandage strip to the venipuncture site after the bleeding has stopped. Adhesive bandage strips do not take the place of pressure and, therefore, are not applied until the bleeding has stopped.
20. Provide for the patient's safety and comfort.
- a. Remove the protective pad.
  - b. Assist the patient to assume a comfortable position.
21. Dispose of and/or store the equipment.
- a. Collect all the equipment and remove it from the area.
  - b. Place the used gauze sponge, alcohol or betadine sponge, and the protective pad in the trash receptacle.
  - c. Store the constricting band and vacutainer adapter IAW local SOP and dispose of the needle and syringe IAW local SOP.
22. Remove the gloves.
23. Perform a patient care handwash.
24. Complete the laboratory request.
- a. Patient identification.
  - b. Requesting physician's name.
  - c. Ward number, clinic, or dispensary.
  - d. Date and time of specimen collection.
  - e. Test(s) requested.
  - f. Specimen source--blood.
  - g. Remarks. Write in the admission diagnosis or the type of surgery in this section.
  - h. Complete the "urgency" box. (Routine, today, preop, STAT, or ASAP.)

## STP 8-91B15-SM-TG

*NOTE:* There are many lab request slips which are used for requesting specific blood tests. All slips must be checked for the minimum information, as given.

25. Forward the specimen to the laboratory.

- a. Attach the lab request to the specimen tube(s) with a rubber band or paper clip.

*NOTE:* Ensure that the lab requests and blood tubes are appropriately labeled with infectious warning labels IAW local SOP.

- b. Arrange for the specimen to be sent to the lab or transport the specimen to the lab IAW local SOP.

26. Perform a patient care handwash.

27. Record the procedure on the appropriate form.

### *Evaluation Guide*

#### **Performance Measures**

#### **Results**

1. Select the proper blood specimen tube.	P	F
2. Label the blood specimen tube.	P	F
3. Perform a patient care handwash.	P	F
4. Assemble the vacutainer unit, needle, and blood specimen tube.	P	F
5. Identify the patient.	P	F
6. Explain the procedure and purpose for collecting the blood.	P	F
7. Position the patient.	P	F
8. Expose the venipuncture site.	P	F
9. Select and palpate the vein.	P	F
10. Prepare sponges for use.	P	F
11. Apply the constricting band.	P	F
12. Palpate the selected vein.	P	F
13. Clean the venipuncture site.	P	F

**Performance Measures****Results**

14. Prepare to puncture the vein.	P	F
15. Puncture the vein.	P	F
16. Collect the specimen.	P	F
17. Withdraw the needle.	P	F
18. Remove the specimen tube from the vacutainer.	P	F
19. Apply an adhesive bandage strip to the site.	P	F
20. Provide for the patient's safety and comfort.	P	F
21. Dispose of and/or store equipment.	P	F
22. Remove the gloves.	P	F
23. Perform a patient care handwash.	P	F
24. Complete the laboratory request.	P	F
25. Forward the specimen to the laboratory.	P	F
26. Perform a patient care handwash.	P	F
27. Record the procedure on the appropriate form.	P	F
28. Do not violate aseptic technique.	P	F
29. Do not cause further injury to the patient.	P	F

**REFERENCES:** None

**081-833-0033**

## **INITIATE AN INTRAVENOUS INFUSION**

### **CONDITIONS**

You have performed a patient care handwash. Necessary materials and equipment: IV injection set, IV solution, needle or catheter-over-needle, constricting band, antiseptic sponges, 2 x 2 gauze sponges, tape, IV stand or substitute, armboard, and gloves.

### **STANDARDS**

Initiate an intravenous infusion without causing further injury or unnecessary discomfort to the patient. Do not violate aseptic technique.

### **TRAINING/EVALUATION**

#### *Training Information Outline*

1. Identify the patient and explain the procedure.
  - a. Ask the patient's name.
  - b. Check the identification band against the patient's chart, as appropriate.
  - c. Explain the reason for IV therapy.
  - d. Explain the procedure and caution the patient against manipulating the equipment.
  - e. Ask about any known allergies to such things as betadine or medication.
  - f. Reassure the patient that this is a common procedure.
2. Select and inspect the equipment for defects, expiration date, and contamination.
  - a. IV fluid of choice (check doctor's orders, as appropriate). Discard containers which have cracks, scratches, leaks, sedimentation, condensation, or fluid which is not crystal clear and colorless.
  - b. IV injection set.
    - (1) Spike, drip chamber, tubing, and needle adapter. Discard them if there are cracks or holes or if any discoloration is present.
    - (2) Tubing clamp. Ensure that the clamp releases and catches.

- c. Needle or catheter-over-needle. Discard them if they are flawed with barbs or nicks.

*NOTE:* Place the stand to the side of the patient and close to the IV site.

3. Prepare the equipment.

- a. Clamp the tubing 6 to 8 inches below the drip chamber.
- b. Remove the protective covers from the spike and from the outlet of the IV container.

**CAUTION**

Do not touch the spike or the outlet of the IV container.

- c. Insert the spike into the container.
  - (1) If using a bag, push the spike firmly into the container's outlet tube.
  - (2) If using a bottle, push the spike firmly through the container's diaphragm.

**CAUTION**

If no vacuum release sound is heard when puncturing bottled solution, discard the solution. Bagged solution makes no vacuum release sound.

- d. Hang the container at least 2 feet above the level of the patient's heart, if possible.

*NOTE:* An IV bag container may be placed under the patient's body if there is no way to hang it.

- e. Squeeze the drip chamber until it is half full of the IV fluid.
- f. Prime the tubing.

*NOTE:* Ensure that all air is expelled from the tubing.

- (1) Hold the tubing above the level of the bottom of the container.
- (2) Loosen the protective cover from the needle adapter to allow the air to escape.
- (3) Release the clamp on the tubing.
- (4) Gradually lower the tubing until the solution reaches the end of the needle adapter.
- (5) Clamp the tubing.

- (6) Retighten the needle adapter's protective cover.
  - (7) Loop the tubing over the IV stand or holder.
  - g. Cut several pieces of tape and hang them in a readily accessible place.
4. Select the infusion site.
- a. Choose the most distal and accessible vein of an uninjured arm or hand.
  - b. Avoid sites over joints.
  - c. Avoid veins in infected, injured, or irritated areas.
  - d. Use the nondominant hand or arm, whenever possible.

**CAUTION**

Do not use an arm that may require an operative procedure.

- e. Select a vein large enough to accommodate the size of needle/catheter to be used.
5. Prepare the infusion site.
- a. Apply the constricting band.

*NOTE:* When applying the constricting band, use soft-walled latex tubing about 18 inches in length.

(1) Place the tubing around the limb, about 2 inches above the site of the venipuncture. Hold one end so that it is longer than the other, and form a loop with the longer end.

(2) Pass the looped end under the shorter end of the constricting band.

*NOTE:* When placing the constricting band, ensure that the tails of the tubing are turned away from the proposed site of venipuncture.

(3) Apply the constricting band tight enough to stop venous flow but not so tightly that the radial pulse cannot be felt.

(4) Tell the patient to open and close his or her fist several times to increase circulation.

**CAUTION**

Do not leave the constricting band in place for more than two minutes.

- b. Select a prominent vein.

*NOTE:* Wet the area with germicide to facilitate palpation of the vein with the fingertips. Touch the distended vein with the fingertips and estimate tissue support.

*NOTE:* If the vein rolls, select another vein.

- c. Tell the patient to close his or her fist and keep it closed until instructed to open the fist.
- d. Clean the skin over the selected area with a germicide-saturated gauze square, using a firm circular motion from the center outward.
- e. Allow the skin to dry and discard the gauze.
- f. Put on gloves for self-protection against transmission of contaminants.

6. Prepare to puncture the vein.

- a. Pick up the assembled needle and remove the protective cover with the other hand.
  - (1) Ensure the needle is bevel up.
  - (2) Place the forefinger on the needle hub to guide it during insertion through the skin and into the vein.
- b. Position yourself so as to have a direct line of vision along the axis of the vein to be entered.

7. Puncture the vein.

**CAUTION**

Keep the needle at the same angle to prevent through-and-through penetration of the vein walls.

*NOTE:* You may position the needle directly above the vein or slightly to one side of the vein.

- a. Draw the skin below the cleaned area downward to hold the skin taut over the site of venipuncture.
- b. Position the needle point, bevel up, parallel to the vein and about 1/2 inch below the site of venipuncture.

## STP 8-91B15-SM-TG

- c. Hold the needle at a 20 to 30 degree angle and insert it through the skin.
- d. Decrease the angle of the needle until it is almost parallel to the skin surface and direct it toward the vein.
- e. Move the needle forward about 1/2 inch into the vein.

### 8. Confirm the puncture.

*NOTE:* A faint "give" will be felt as the needle enters the lumen of the vein.

- a. Check for blood in the flash chamber. If successful, proceed to step 9.
- b. If the venipuncture is unsuccessful, pull the needle back slightly (not above the skin surface) and attempt to pierce the vein again.
- c. If the venipuncture is still unsuccessful, release the constricting band and tell the patient to open and relax his or her clenched fist.

- (1) Place a sponge lightly over the site and quickly withdraw the needle.

- (2) Immediately apply pressure to the site.

- d. Notify your supervisor before attempting a venipuncture at another site.

### 9. Advance the needle.

- a. Grasp the hub and advance the needle into the vein up to the hub.
- b. While continuing to hold the hub, press lightly on the skin over the needle or catheter tip with the fingers of the other hand.

*NOTE:* This prevents the backflow of blood from the hub.

- c. If using a catheter-over-needle, remove the needle from inside the catheter.

10. Remove the protective cover from the needle adapter on the tubing. Quickly and tightly connect the adapter to the catheter or needle hub.

### **WARNING**

Do not allow air to enter the blood stream.

11. Tell the patient to unclench the fist, and then release the constricting band.



12. Unclamp the IV tubing and adjust the flow rate to keep the vein open (TKO or KVO).

*NOTE:* A rate of about 30 cc per hour, or 7 to 10 drops per minute using standard drip tubing, is adequate to keep the vein open.

13. Check the site for infiltration. If it is painful, swollen, red, cool to the touch, or if fluid is leaking from the site, stop the infusion immediately.

14. Secure the site IAW local SOP.

- a. Apply a sterile dressing over the puncture site, leaving the hub and tubing connection visible.
- b. Loop the IV tubing onto the extremity and secure the loop with tape.
- c. Splint the arm loosely on a padded splint, if necessary, to reduce movement.

15. Readjust the flow rate.

a. Determine the total time over which the patient is to receive the dosage. Example: The patient is to receive the dosage over a three hour period.

b. Determine the total IV dosage the patient is to receive by checking the doctor's orders. Example: The patient is to receive 1000 cc of IV fluid.

c. Check the IV tubing package to determine the number of drops of IV fluid per cc the set has been designed to deliver. Example: The set is designed to give 10 drops of IV fluid per cc (10 gtt/cc).

d. Multiply the total hours (step 15a) by 60 minutes to determine the total minutes over which the IV dosage is to be administered. Example: three hours x 60 min = 180 min.

e. Divide the total IV dosage (step 15b) by the total minutes over which the IV dosage is to be administered (step 15d) to determine the cc of fluid to be administered per minute.  
Example:  $1000 \text{ cc} / 180 \text{ min} = 5.5 \text{ cc/min}$ .

f. Multiply the cc/min (step 15e) by the number of drops of IV fluid per cc delivered by the tubing (step 15c) to determine the number of drops per minute to be administered.  
Example:  $5.5 \text{ cc/min} \times 10 \text{ drops/cc} = 55 \text{ drops/min}$ .

*NOTE:* Always round drops per minute off to the nearest whole number. If drops per minute equal .5, round up to the next whole number.

## **STP 8-91B15-SM-TG**

16. Prepare and place the appropriate label.

a. Dressing.

(1) Print the information on a piece of tape.

(a) Date and time the IV was started.

(b) Initials of the person initiating the IV.

(2) Secure the tape to the dressing.

b. IV solution container.

(1) Print the information on a piece of tape.

(a) Patient's identification.

(b) Drip rate.

(c) Date and time the IV infusion was initiated.

(d) Initials of the person initiating the IV.

(2) Secure the tape to the IV container.

c. IV tubing.

(1) Wrap a strip of tape around the tubing, leaving a tab.

(2) Print the date and time the tubing was put in place and the initials of the person initiating the IV.

*NOTE:* Place disposable items in an appropriate receptacle and clean and store equipment IAW local SOP.

17. Recheck the site for infiltration.

18. Perform a patient care handwash.

19. Record the procedure on the appropriate form.

a. Date and time the IV infusion was initiated.

b. Type and amount of IV solution initiated.

- c. Drip rate and total volume to be infused.
- d. Type and gauge of needle or cannula.
- e. Location of the infusion site.
- f. Patient's condition.
- g. Name of the person initiating the IV.

### *Evaluation Guide*

Performance Measures	Results	
1. Inspect the equipment.	P	F
2. Prepare the equipment.	P	F
3. Identify the patient and explain the procedure.	P	F
4. Select the infusion site.	P	F
5. Prepare the infusion site.	P	F
6. Prepare to puncture the vein.	P	F
7. Puncture the vein.	P	F
8. Confirm the puncture.	P	F
9. Advance the needle or the catheter.	P	F
10. Connect the tubing to the catheter or needle hub.	P	F
11. Release the constricting band.	P	F
12. Unclamp the IV tubing and adjust the flow rate TKO.	P	F
13. Check the site for infiltration.	P	F
14. Secure the site.	P	F
15. Readjust the flow rate.	P	F
16. Prepare and place the appropriate labels.	P	F

## **STP 8-91B15-SM-TG**

### **Performance Measures**

### **Results**

17. Recheck the site for infiltration.	P	F
18. Perform a patient care handwash.	P	F
19. Record the procedure on the appropriate form.	P	F
20. Do not violate aseptic technique.	P	F
21. Do not cause further injury to the patient.	P	F

**REFERENCES:** None

081-833-0034

**MANAGE A PATIENT WITH AN INTRAVENOUS INFUSION****CONDITIONS**

Necessary materials and equipment: dressings, antiseptic swabs, sterile gauze, IV tubing, IV solution, tape, antimicrobial ointment, and exam gloves.

**STANDARDS**

Properly manage a patient with an IV infusion, accurately documenting the IV therapy, properly assessing for the complications of IV therapy, and initiating appropriate interventions when necessary. Do not violate aseptic technique and do not cause further injury to the patient.

**TRAINING/EVALUATION***Training Information Outline*

1. Assess for signs and symptoms of IV therapy complications.

a. Infiltration is an accumulation of fluids in the tissue surrounding an IV needle site. It is caused by penetration of the vein wall by the needle/catheter or later dislodgement of the needle/catheter.

- (1) Solution flows sluggishly or not at all.
- (2) Discoloration or cool feeling around the infusion site.
- (3) Swollen extremity.
- (4) Fluid leaking from the infusion site.
- (5) Patient complains of pain, tenderness, irritation, or burning at the infusion site.

b. Phlebitis is an inflammation of the wall of the vein. It is caused by injury to the vein during puncture, from later needle movement, or from irritation to the vein caused by long term therapy, incompatible additives, or use of a vein that is too small to handle the amount or type of solution.

- (1) Swelling, redness, and/or tenderness around the venipuncture site.
- (2) Sluggish flow rate.

c. Infection is a yellowish, foul-smelling discharge (pus) from the venipuncture site.

## **STP 8-91B15-SM-TG**

d. Air embolism is the obstruction of a blood vessel by air carried via the bloodstream (usually occurring in the lungs or heart). It is caused by conditions such as air bubbles in the IV tubing, a solution container that has run dry, or disconnected IV tubing.

- (1) Abrupt drop in blood pressure.
- (2) Chest pain.
- (3) Weak, rapid pulse.
- (4) Cyanosis.
- (5) Loss of consciousness.

e. Circulatory overload is an increased blood volume that is caused by excessive IV fluid infused too rapidly into the vein (overhydration).

- (1) Elevated blood pressure.
- (2) Distended neck veins.
- (3) Rapid breathing, shortness of breath, tachycardia.
- (4) Fluid intake is much greater than urine output.

### **2. Perform the nursing interventions for IV therapy complications.**

#### **a. Infiltration.**

- (1) Stop the infusion.
- (2) Notify your supervisor.
- (3) Record observations and action taken.

#### **b. Phlebitis.**

- (1) Stop the infusion.
- (2) Report observations to your supervisor.
- (3) Record observations and actions taken.

- c. Infection.
  - (1) Report observations to your supervisor.
  - (2) Record observations and actions taken.
- d. Air embolism.
  - (1) Report observations to your supervisor.
  - (2) Record observations and actions taken.
- e. Circulatory overload.
  - (1) Slow the infusion rate to TKO.
  - (2) Place the patient in the semi-Fowler's position.
  - (3) Notify the physician or supervisor.
  - (4) Record observations and actions taken.

3. Document the IV therapy.

- a. Frequency.
  - (1) When the IV is initiated.
  - (2) Each time any part of the IV equipment is changed.
- b. Label the dressing.
  - (1) Cut adhesive tape and place it on a flat surface.

*NOTE:* Never write on the tape after it has been placed on the dressing.

- (2) Record the information on the piece of tape.
  - (a) The gauge of the catheter/needle.
  - (b) The time and date the dressing was applied.
  - (c) Your initials.
- (3) Place the labeled tape over the dressing.

## STP 8-91B15-SM-TG

- c. Label the solution container.
  - (1) Cut adhesive tape and place it on a flat surface.
  - (2) Record the information on the piece of tape.
    - (a) The patient's name.
    - (b) The patient's identification number and room/ward number, as appropriate.
    - (c) The infusion rate.
    - (d) The time and date the solution container was hung.
    - (e) Your initials.
  - (3) Place the label on the solution container.
  - (4) Prepare the timing label.
    - (a) Place a strip of adhesive tape vertically along the length of the solution container.
    - (b) Determine how long the solution container will last. (See task 081-833-0033.)
    - (c) Write on the tape the approximate times at which the solution level will reach the volume markings on the solution container.
    - (d) At the bottom of the label write the approximate time the solution container will be empty.
- d. Label the tubing.
  - (1) Place a strip of adhesive tape around the tubing, leaving a tab.
  - (2) Write on the tab the date and time the tubing was changed.
- e. Record the information on the appropriate forms (Nursing Notes/Field Medical Card).
  - (1) The date and time the IV was initiated.
  - (2) The amount and type of solution.
  - (3) The infusion rate.
  - (4) The type and gauge of the needle/catheter.



(5) The insertion site.

(6) The patient's condition.

(7) Your name.

f. Record the amount of infusion on DD Form 792, if applicable.

4. Replace the solution container (only).

*NOTE:* Change the solution container every 24 hours when running a slow infusion in which the container may not be depleted in 24 hours.

a. Perform a patient care handwash.

b. Select or prepare the new solution. (See task 081-833-0033.)

c. Clamp the IV tubing shut.

d. Remove the used container from the IV hanger.

e. Remove the spike from the used container.

f. Insert the IV spike into a new IV container.

**CAUTION**

The old tubing is still connected to the catheter or needle. Use care to maintain sterility. To prevent the backflow of blood, keep the spike and tubing elevated.

g. Hang the new container.

h. Adjust the infusion rate.

i. Label the solution container and prepare a timing label.

j. Record the amount of solution received from the previous container, and the time, type, and amount of new solution.

5. Change the dressing.

*NOTE:* Change the dressing every 24 hours or IAW local SOP.

a. Perform a patient care handwash.

## STP 8-91B15-SM-TG

- b. Remove the tape and the old dressing without dislodging the catheter/needle.

*NOTE:* Tubing should remain taped in place to reduce the chance of accidental dislodgement of the catheter or needle.

- c. Clean the area around the infusion site IAW local SOP.
- d. Examine the site for infiltration.
- e. Cover the infusion site with sterile gauze and secure with tape, or dress IAW local SOP.
- f. Secure the dressing to the site without encircling the wrist or arm.
- g. Label the dressing.

### 6. Replace the solution container and tubing.

*NOTE:* Change the tubing every 48 hours or IAW local SOP. Time the tubing change to coincide with the time the solution container will be changed.

- a. Perform a patient care handwash.
- b. Spike the new tubing into a new solution container and hang it from the IV pole.
- c. Prime the tubing and clamp it.
- d. Clamp the old tubing shut.
- e. Connect the new tubing to the needle hub.

### **WARNING**

Wear gloves for self-protection against transmission of contaminants whenever handling body fluids.

- (1) Loosen the tape on the old tubing without dislodging the catheter and needle.
- (2) Place a sterile gauze pad under the catheter or needle hub to provide a small sterile field for the needle hub.
- (3) Grasp the new tubing between the fingers of one hand.

(4) Grasp the catheter or needle hub with a sterile gauze pad between the thumb and index finger and carefully disconnect the old adapter.

(5) Press the fingers over the catheter or needle tip to help prevent dislodgement and backflow of blood.

(6) Remove the protective cap from the new tubing adapter and quickly connect it to the catheter or needle hub.

**CAUTION**

Do not remove the protective cap with your teeth.

(7) Remove the pressure over the catheter or needle tip.

(8) Remove the gauze pad from under the needle hub and clean the site, if necessary.

(9) Secure the tubing to the arm and reinforce the dressing, as necessary.

(10) Adjust the infusion rate.

7. Discontinue the infusion.

- a. Perform a patient care handwash.
- b. Put on exam gloves.
- c. Clamp the IV tubing.
- d. Remove the tape and dressing without dislodging the needle and catheter.
- e. Place a sterile gauze pad over the injection site.
- f. Smoothly pull out the needle, following the course of the vein.

**WARNING**

Do not twist, raise, or lower the needle.

- g. Apply pressure to the site with the gauze.
- h. Examine the needle or catheter to ensure that it was removed intact.

## STP 8-91B15-SM-TG

- i. Apply an adhesive bandage to the site, if necessary.
  - j. Dispose of the used equipment IAW local SOP.
8. Record the procedure on the appropriate form.

*NOTE:* Ensure that the fluids received have been recorded on the appropriate form(s).

### *Evaluation Preparation*

*Setup:* If the performance of this task must be simulated for training or evaluation, assemble the IV materials and equipment as indicated in task 081-833-0033. It is not necessary to have the catheter or needle inserted into a person. A simulated arm or other material may be used.

*Brief soldier:* Tell the soldier to manage a patient with an intravenous infusion.

### *Evaluation Guide*

#### **Performance Measures**

#### **Results**

1. Assess for signs and symptoms of IV therapy complications.	P	F
2. Perform the nursing interventions for IV therapy complications.	P	F
3. Document the IV therapy.	P	F
4. Replace the solution container, as necessary.	P	F
5. Change the dressing, as required.	P	F
6. Replace the solution container and tubing, as necessary.	P	F
7. Discontinue the infusion, as required.	P	F
8. Record the procedure on the appropriate form.	P	F
9. Do not violate aseptic technique.	P	F
10. Do not cause further injury to the patient.	P	F

**REFERENCES:** None

081-833-0088

**PREPARE AN INJECTION FOR ADMINISTRATION****CONDITIONS**

You have performed a patient care handwash. Necessary materials and equipment: needles and syringes, medication, alcohol sponges, dry sterile gauze, and physician's orders.

**STANDARDS**

Select, inspect, and assemble the appropriate needle and syringe. Draw the correct medication. Follow aseptic technique throughout the procedure.

**TRAINING/EVALUATION***Training Information Outline*

1. Select an appropriate needle.
  - a. Select a needle with the proper length based upon the following factors:
    - (1) The type of injection to be given (subcutaneous, intramuscular, or intradermal).
    - (2) The size of the patient (thin, obese).
    - (3) The injection site (one inch for deltoid, 1 1/2 inches for gluteus maximus).
  - b. Select a needle with the proper gauge based upon the thickness of the medication to be injected.

*NOTE:* The gauge of the needle is indicated by the numbers 14 through 27. The higher the number, the smaller the diameter (bore) of the needle. A small bore needle is indicated for thin medications. A large bore needle is indicated for thick medications.

2. Select an appropriate syringe.
  - a. Check the drug manufacturer's specifications to determine whether a glass or plastic syringe should be used for the medication.

*NOTE:* Some medications deteriorate in a plastic syringe. Drug manufacturer's specifications provide guidance.

- b. Ensure that the total capacity of the syringe, usually measured in cubic centimeters (cc), is appropriate for the amount of medication to be administered.

## STP 8-91B15-SM-TG

- c. Check the intervals of the calibration marks on the syringe.
- 3. Inspect the needle and syringe packaging for defects such as open packages, holes, and water spotting. Discard the equipment if any defect is found.
- 4. Unpack the syringe.
  - a. If the syringe is in a flexible wrapper, peel the sides of the wrapper apart to expose the rear end of the syringe barrel.
  - b. Grasp the syringe by the barrel with the free hand.

### CAUTION

The needle adapter and the shaft of the plunger are sterile. Contamination could cause infection in the patient. The outside of the syringe barrel does not have to be kept sterile.

- c. Pull the syringe from the packaging.
- d. If the syringe is packaged in a hard plastic tube container, press down and twist the cap until a distinct "pop" is heard. If the "pop" is not heard, the seal has been previously broken and the equipment must be discarded.
- 5. Inspect the syringe.
  - a. Grasp the flared end of the syringe and pull the plunger back and forth to test for smooth, easy movement.
  - b. Visually check the rubber stopper (inside the syringe) to ensure that it is attached securely to the top end of the plunger, forming a seal.
  - c. If the plunger is stuck or does not move smoothly, discard the syringe.
  - d. Push the plunger fully into the barrel until ready to fill the syringe with medication.
- 6. Unpack the needle.

### CAUTION

All parts of the needle are sterile. Be careful not to touch the hub. This would contaminate the needle and possibly pass an infection to the patient. Only the outside of the needle cover may be touched.

- a. If the needle is packaged in a flexible wrapper, peel the sides of the wrapper apart to expose the needle hub.

b. If the needle is packaged in a hard plastic tube, twist the cap of the tube until a "pop" is heard. Remove the cap to expose the needle hub. If a "pop" is not heard, the seal has been previously broken, and the equipment must be discarded.

7. Join the needle and the syringe.

- a. Insert the needle adapter of the syringe into the hub of the needle.
- b. Tighten the needle by turning one fourth of a turn to ensure that it is securely attached.

8. Inspect the needle.

a. Hold the needle and syringe upright and remove the protective cover from the needle by pulling it straight off.

*NOTE:* A twisting motion may pull the needle off the hub.

b. Visually inspect the needle for burrs, barbs, damage, and contamination. If the needle has any defects or damage, replace it with another sterile needle.

c. Place the protective cover back on the needle.

9. Place the assembled needle and syringe on the work surface.

- a. Leave the protective cover on the needle.
- b. Leave the plunger pushed fully into the barrel.
- c. Keep the assembled needle and syringe continually within range of vision.

*NOTE:* When you assemble a needle and syringe, you are responsible for maintaining sterility and security of the equipment.

10. Verify the drug label and check the container for defects.

- a. Compare the medication with the doctor's orders. The medication label must be verified three times.
  - (1) When obtained from the place of storage.
  - (2) When withdrawing the medication.
  - (3) When returning the container to storage.

## STP 8-91B15-SM-TG

b. Examine the container.

- (1) Examine the rubber stopper for defects, such as small cores or plugs torn from the stopper.
- (2) Hold the vial to the light to check for foreign particles and changes in color and consistency. If the solution is in a dark vial, withdraw some solution to perform the checks.
- (3) Check the date a multidose vial was opened and check the expiration date of the medication.
- (4) Determine whether the medication was stored properly, such as under refrigeration.

*NOTE:* If there is any evidence of contamination, discard the container and obtain another.

11. Prepare and draw the medication.

a. Draw medication from a stoppered vial which contains a prepared solution.

- (1) Remove the protective cap.
- (2) Clean the stopper and neck of the vial with an alcohol sponge.
- (3) Pick up the assembled needle and syringe and remove the protective needle cover.
- (4) Slowly draw the plunger to the prescribed cc mark of medication.
- (5) Pick up the vial and insert the needle into the rubber stopper, exerting slight downward and forward pressure. Ensure that the needle tip passes completely through the cap.

*NOTE:* To avoid contamination, the hub of the needle should not touch the rubber cap.

- (6) Push the plunger fully into the barrel to inject the air.
- (7) With the vial inverted (and keeping the needle tip in the solution), pull the plunger back to the desired cc mark, withdrawing the medication.
- (8) Withdraw the needle from the container.
- (9) Verify the correct dosage against the doctor's orders by raising the syringe to eye level and ensuring that the forward edge of the plunger is exactly on the prescribed cc mark.

b. Draw medication from a stoppered vial which contains a powdered medication which must be prepared.

- (1) Remove the protective caps from the vial containing the powdered medication and the vial containing the sterile diluent.



(2) Clean the stoppers of both vials with alcohol sponges.

(3) Withdraw the required diluent, using the same procedure as for a stoppered vial. (See steps 11a(3) through 11a(8).)

(4) Hold the vial with the powdered medication horizontally, insert the needle through the stopper, and inject the diluent.

*NOTE:* If the vial with powdered medication contains air, the diluent may be difficult to inject. Air may have to be withdrawn to allow the diluent to be injected.

(5) Withdraw the needle.

(6) Gently invert the vial several times until all the powder is dissolved. Visually inspect the solution to ensure that it is well-mixed.

(7) Change the needle (or needle and syringe) and insert it into the vial of reconstituted solution.

(8) Withdraw the prescribed amount of medication. (See step 11a(7).)

(9) Withdraw the needle from the container.

(10) Verify the correct dosage. (See step 11a(9).)

c. Draw medication from an ampule.

(1) Lightly tap the upright ampule to force any trapped medication from the ampule neck and top.

(2) Clean the neck of the ampule with an alcohol sponge and wrap it with the same sponge.

(3) Grasp the ampule with both hands and snap the neck by bending it away from the breakline--directing it away from you and others.

(4) Inspect the ampule for minute glass particles. If any are found, discard the ampule.

(5) Remove the protective cover from the assembled needle and syringe.

(6) Insert the needle and withdraw the medication by holding the ampule vertically or by placing the ampule upright on a flat surface.

(7) Withdraw the prescribed medication, being careful not to touch the outside edge or bottom of the ampule with the needle.

(8) Withdraw the needle and verify the correct dosage. (See step 11a(9).)

## STP 8-91B15-SM-TG

12. Check the syringe for air bubbles.
  - a. Hold the syringe with the needle pointing up.
  - b. Pull back on the plunger slightly to clear all the medication from the needle shaft.
  - c. Tap the barrel lightly to force bubbles to the top of the barrel.
  - d. Pull the plunger back slightly and push it forward until the solution is in the needle hub, clearing it of bubbles.
13. Reverify the correct dosage. (See step 11a(9).)
14. Cover the needle with the protective needle cover.

### *Evaluation Preparation*

*Setup:* If the performance of this task must be simulated for training and evaluation, colored solutions may be used to simulate medications. Have several sizes of needles and syringes available. Tell the soldier what type of medication is being simulated and what the route of administration would be. Have him or her select the appropriate needle and syringe. To test step 2, tell the soldier of any manufacturer's specifications. Testing may be varied by using various medications to be administered by different routes. Needles and syringes may be reused.

*Brief soldier:* Tell the soldier to assemble the proper needle and syringe and draw the medication.

### *Evaluation Guide*

Performance Measures	Results	
1. Select the appropriate needle.	P	F
2. Select the appropriate syringe.	P	F
3. Inspect the packaging for defects.	P	F
4. Unpack the syringe.	P	F
5. Inspect the syringe.	P	F
6. Unpack the needle.	P	F
7. Join the needle and syringe.	P	F
8. Inspect the needle.	P	F

**Performance Measures****Results**

9. Place the assembled needle and syringe on the work surface.	P	F
10. Verify the drug label and check the container for defects.	P	F
11. Prepare and draw the medication.	P	F
12. Check the syringe for air bubbles.	P	F
13. Reverify the correct dosage.	P	F
14. Cover the needle with the protective needle cover.	P	F
15. Do not violate aseptic technique.	P	F

**REFERENCES:** None

**081-833-0089**

**ADMINISTER AN INJECTION (INTRAMUSCULAR, SUBCUTANEOUS, INTRADERMAL)**

**CONDITIONS**

You have performed a patient care handwash and have verified the physician's orders. Necessary materials and equipment: syringe(s) with the prepared medication(s), antiseptic pads, alcohol sponge swabs, sterile gauze, adhesive tape, and the patient's record.

**STANDARDS**

Administer the injection IAW the physician's orders without violating aseptic technique or causing injury to the patient.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Verify the required injection(s) with the physician's orders.
2. Identify the patient by asking the patient's name and checking the identification tag or band. Ask the patient if he or she has any allergies or has experienced a drug reaction.

**WARNINGS**

1. If there is a known allergy, do not administer the injection. Consult your supervisor.
2. Determine if a female patient is pregnant because of possible side effects of certain immunizing agents on the unborn child. If there is a question, do not administer the injection without written authorization.

3. Verify that the appropriate needle, syringe, and medication are being used. (See task 081-833-0088.)

*NOTE:* Strict aseptic technique must be employed whenever foreign bodies (the needle and medications) are introduced into body tissues.

**WARNING**

Have an emergency tray available for the immediate treatment of serious reactions. Include a constricting band and syringe containing a 1:1000 solution of epinephrine. Have a tracheostomy set available since the majority of fatalities reported involve asphyxiation due to laryngeal edema.

4. Select and expose the injection site.

a. Intramuscular injection.

(1) The upper arm deltoid muscle--the outer one-third of the arm between the lower edge of the shoulder bone and the armpit. Approximately three fingerwidths below the shoulder bone is the safe area.

(2) Buttocks--the upper-outer quadrant of either buttock.

*NOTE:* To identify the injection site, draw an imaginary horizontal line across the buttocks from hip bone to hip bone. Then divide each buttock in half with an imaginary vertical line. (See Figure 3-12.)

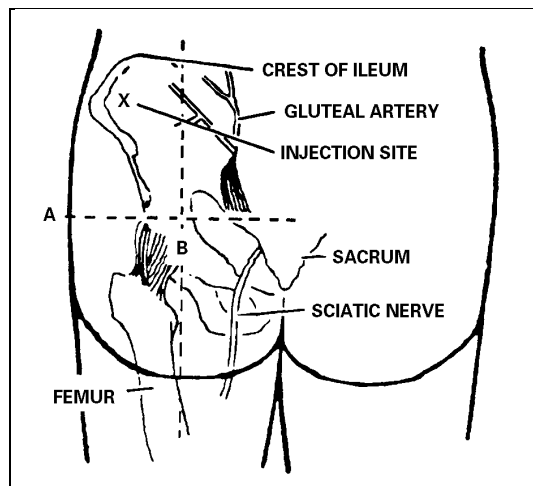


Figure 3-12

**WARNING**

Do not give the injection in an area outside the upper-outer quadrant. The needle may do irreparable damage to the sciatic nerve or pierce the gluteal artery and cause significant bleeding.

(3) Outer thigh--the area between a hand's width above the knee and a hand's width below the groin.

b. Subcutaneous injection.

(1) Upper arm.

(2) Outer thigh.

## STP 8-91B15-SM-TG

- (3) Abdomen.

*NOTE:* Some medications, such as insulin and heparin, are administered into the subcutaneous tissue of the abdomen.

- c. Intradermal injection.

- (1) Inner forearm.
- (2) Back of the upper arm.
- (3) On the back below the shoulder blades.

### 5. Position the patient.

- a. Intramuscular.

- (1) Upper arm--standing or sitting with the area completely exposed, muscles relaxed, and the arm at the side.

- (2) Buttocks--lying face down or leaning forward and supported by a stable object with the weight shifted to the leg that will not be injected. The area is completely exposed.

*NOTE:* If the patient is lying in a prone position (face down), place the toes together with the heels apart. This will relax the muscles of the buttocks.

- (3) Outer thigh--lying face up or seated with the area completely exposed.

- b. Subcutaneous.

- (1) Upper arm--see step 5a(1).
- (2) Outer thigh--lying face up or seated, with the area completely exposed.

- c. Intradermal.

- (1) Inner forearm--standing, sitting, or lying. Palm up, with the arm supported and relaxed.
- (2) Upper arm--see step 5a(1).
- (3) Back--seated, leaning forward and supported on a stable object, or lying face down.

6. Clean the injection site.

a. Intramuscular and subcutaneous.

(1) Open the antiseptic pad package.

(2) Begin at the injection site and with a spiral motion, clean outward 3 inches.

b. Intradermal.

(1) Use ethyl alcohol or acetone germicide and a sterile sponge.

(2) Begin at the injection site and with a spiral motion, clean outward 3 inches.

*NOTE:* The antiseptic pad may be held between the last two fingers for use when the needle is removed.

7. Pull the needle cover straight off without bending or touching the needle.

8. Prepare the skin for the injection.

a. Intramuscular and subcutaneous. Form a fold of skin at the injection site by pinching the skin gently between the thumb and the index finger of the nondominant hand. Do not touch the injection site.

b. Intradermal. Using the thumb of the nondominant hand, apply downward pressure directly below and outside the prepared injection site. Hold the skin taut until the needle has been inserted.

**CAUTION**

Do not retract or move the skin laterally.

9. Insert the needle.

a. Intramuscular. With the dominant hand, position the needle, bevel up, at a 90 degree angle to, and about 1/2 inch from, the skin surface. Plunge the needle firmly and quickly straight into the muscle to the depth of the needle.

b. Subcutaneous. With the dominant hand, position the needle, bevel up, at a 45 degree angle to the skin surface. Plunge the needle firmly and quickly into the fatty tissue below the skin to the depth of the needle.

c. Intradermal. With the dominant hand, position the needle, bevel up, at a 15 to 20 degree angle to the skin surface. Insert it just under the skin until the bevel is covered. Do not move the skin.

10. Release the hold on the skin.

11. Administer the medication.

a. Intramuscular and subcutaneous.

(1) Aspirate by pulling back slightly on the plunger of the syringe.

(a) If blood appears, stop the procedure. Go to step 3 and begin the procedure again. Use a new needle, syringe, and medication, and select a different injection site.

(b) If no blood appears, continue the procedure.

**WARNING**

Failure to aspirate could cause the medication to be injected into the blood stream.

(2) Using a slow continuous movement, completely depress the plunger, injecting the medication.

*NOTE:* Rapid pressure may cause a burning pain.

(3) Place an antiseptic pad (or sterile 2 x 2) lightly over the injection site and withdraw the needle at the same angle at which it was inserted. Gently massage the injection site with the pad, unless this is contraindicated for the medication that has been injected.

(4) Put an adhesive bandage strip over the injection site if bleeding occurs.

b. Intradermal.

*NOTE:* Do not aspirate.

(1) Push the plunger slowly forward until all medication has been injected and a wheal appears at the site of the injection.

(a) If no wheal appears, go to step 3 and begin the procedure again. Use a new needle, syringe, and medication and select a different injection site.

(b) If a wheal appears, continue the procedure.

(2) Quickly withdraw the needle at the same angle at which it was inserted.

(3) Without applying pressure, cover the injection site with dry sterile gauze.

(4) Instruct the patient not to scratch, rub, or wash the injection site.

(5) If appropriate, instruct the patient when and where to have the test read IAW local SOP.



12. Check the site for bleeding.
13. Observe the patient for anaphylactic shock symptoms IAW local SOP. (See task 081-833-0031.)
14. Dispose of the needle and syringe IAW local SOP.
15. Record the procedure on the appropriate form.

### ***Evaluation Preparation***

*Setup:* If the performance of this task must be simulated for training and evaluation, have another soldier act as the patient. If so, ensure that the prepared syringes contain no more than 0.2 cc of a safe, sterile, injectable solution. Tell the soldier which type of injection to give. Ensure that medical coverage is available in case of reaction.

*Brief soldier:* Tell the soldier to administer the injection.

### **WARNING**

If the soldier violates aseptic technique or starts to do something which could injure the patient, stop the evaluation immediately.

### ***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Verify the required injection(s) with the physician's orders.	P	F
2. Identify the patient and ask the patient about allergies or drug reactions.	P	F
3. Verify the appropriate needle, syringe, and medication.	P	F
4. Select and expose the injection site.	P	F
5. Position the patient.	P	F
6. Clean the injection site.	P	F
7. Remove the needle cover.	P	F
8. Prepare the skin for injection.	P	F
9. Insert the needle.	P	F

## STP 8-91B15-SM-TG

### Performance Measures

### Results

10. Release the skin.	P	F
11. Administer the medication.	P	F
12. Check the site for bleeding.	P	F
13. Observe the patient for adverse reactions.	P	F
14. Dispose of the needle and syringe.	P	F
15. Record the procedure on the appropriate form.	P	F
16. Do not violate aseptic technique.	P	F
17. Do not cause further injury to the patient.	P	F

**REFERENCES:** None

081-833-0015

## **SURVEY A CASUALTY**

### **CONDITIONS**

You find a casualty in any environment with more than one injury and have available the necessary materials and equipment.

### **STANDARDS**

Survey a casualty, identifying all injuries in life threatening priority and stabilizing the casualty without causing further injury.

### **TRAINING/EVALUATION**

#### *Training Information Outline*

1. Perform a general survey of the scene.
  - a. The type of incident.
  - b. The number of casualties.
  - c. The type of terrain.
  - d. The number and type(s) of vehicles involved, if any.
  - e. The safety of the environment.
- NOTE:* In some instances, the first assessment may be based upon an incoming radio or telephone call. The medic should obtain this information and prepare accordingly.
2. Determine what type of injuries may be found based upon the type of incident (mechanism of injury).
  - a. Airborne operations--suspect leg and spinal injuries.
  - b. Diving--suspect head and cervical spine injuries.
  - c. Motor vehicle accidents--suspect head, neck, chest, and pelvic injuries.

3. Perform a primary survey.

*NOTE:* On an integrated battlefield, administer treatment for chemical injuries as necessary during the survey.

**WARNING**

Presume that all casualties who have been or are unconscious, or have head or facial injuries, have a spinal injury.

*NOTE:* Maintain the casualty's spine in a natural position with manual immobilization as needed.

- a. Check for responsiveness.
  - (1) Shake the casualty's shoulder and shout, "Are you okay?"
  - (2) If responsive, proceed to step 3e.
- b. Assess the airway.
  - (1) If necessary, use the chin lift or jaw thrust method to open the airway.
  - (2) If necessary, clear the airway.

*NOTE:* If the casualty is unconscious, an oropharyngeal airway may be needed. (See task 081-833-0016.)

- c. Check for breathing.
  - (1) Look for the rise and fall of the chest.
  - (2) Listen for breath sounds.
  - (3) Feel for movement of air during inhalation and exhalation.
  - (4) If necessary, perform rescue breathing.
- d. Check circulation, if necessary.
  - (1) Feel (palpate) the casualty's neck to check the carotid pulse.
  - (2) Feel the casualty's wrists for a radial pulse.
  - (3) If neither pulse exists, begin circulatory support.
- e. Check for bleeding.

*NOTE:* If the casualty has more than one severely bleeding wound, first treat the wound losing the most blood. Use buddy-aid or self-aid if possible.

- (1) Check for open wounds. If missile wounds are noted, check for both entry and exit wounds.
  - (2) Check body openings such as the nose, ears, and mouth.
  - (3) Feel the casualty's body and clothing.
  - (4) Determine the source of bleeding, if present.
    - (a) Arterial--bright red blood that gushes or spurts.
    - (b) Venous--dark red blood that flows in a steady stream.
    - (c) Capillary--dark red blood that oozes in a steady stream.
  - (5) Determine the type of bleeding, if present.
    - (a) Serious--arterial, major veins, open wounds.
    - (b) Minor--lacerations, abrasions, contusions.
    - (c) Internal--closed wounds.
  - (6) Treat the life-threatening wound(s). (See tasks 081-833-0045, 081-833-0046, 081-833-0049, 081-833-0050, and 081-833-0052.)
- f. Check for shock.
- (1) Hemorrhagic--rapid severe blood loss. (See task 081-833-0047.)
  - (2) Anaphylactic--allergic reaction. (See task 081-833-0031.)
  - (3) If present, begin treatment.
- g. Check the casualty's level of consciousness using the AVPU method.
- (1) A--alertness.
  - (2) V--responsiveness to vocal stimuli.
  - (3) P--responsiveness to painful stimuli.
  - (4) U--unresponsiveness.

## STP 8-91B15-SM-TG

4. Perform a secondary survey.
  - a. Establish the casualty's baseline vital signs.
    - (1) Check the casualty's pulse.
    - (2) Check the casualty's respirations.
    - (3) Check the casualty's blood pressure.

*NOTE:* If the equipment with which to take a blood pressure reading is not available, use the following guidelines: The presence of a carotid pulse indicates a systolic pressure of about 60. The presence of a femoral pulse indicates a systolic pressure of about 70. The presence of a radial pulse indicates a systolic pressure of about 80.

- (4) Check the casualty's temperature using either a thermometer or the back of your hand.
      - (a) Cool and clammy--possible trauma, shock, heat exhaustion, or bleeding.
      - (b) Cool and dry--possible exposure to excessive cold.
      - (c) Hot and dry--possible fever, exposure to excessive heat, or heat stroke.
  - b. Check the color of the casualty's skin, extremities, fingernails, and the inside of the lips of people with a dark complexion.

*NOTE:* Check the casualty's color while simultaneously establishing the baseline vital signs.

- (1) Reddish color--possible high blood pressure, carbon monoxide poisoning, burns, sunburn, or heat stroke.
    - (2) Whitish color--possible fright, myocardial infarction, or shock.
    - (3) Bluish color--possible asphyxia, reduced oxygen, myocardial infarction, electrocution, poisoning, or death.
  - c. Take the casualty's pertinent history using the AMPLE method, if possible.
    - (1) A--allergies.
    - (2) M--medications being taken.
    - (3) P--past history of illness and/or diseases.
    - (4) L--last meal or drink.

- (5) E--events preceding the injury and/or illness.
- d. Check the casualty's reaction to pain by gently palpating the casualty as you progress through the secondary survey. Observe the casualty for a painful response.
  - (1) Numbness or tingling in the extremities--possible spinal cord injuries.
  - (2) Severe pain and no pulse in the extremities--possible occlusion of the main artery to that extremity.
  - (3) No feeling when there is an obvious injury--hysteria, violent shock, excessive alcohol or drug use, or a spinal cord injury.
  - (4) General pain with injury--bodily injury.
  - (5) Local pain in an extremity--a possible fracture.
- e. Check the casualty's ability to move by asking him to move his extremities and/or by using the hand pressure test.
  - (1) Limited use of any or all extremities--possible spinal cord injury.
  - (2) Paralysis on one side--possible stroke, spinal cord injury, or lower back injury.
  - (3) Inability to move arms and hands--possible pressure on the spinal cord or brain.
  - (4) Inability to move legs and feet--possible stroke, head injury with brain damage or hemorrhage.
- f. Check the casualty's head.
  - (1) Observe for the skin color and facial symmetry.
    - (a) Palpate gently for skull depressions.
    - (b) Check the ears and nose for fluid or blood.
    - (c) Check the mouth for foreign objects or bleeding.
  - (2) Assess the casualty's level of consciousness.
    - (a) Observe the general appearance of the casualty.
    - (b) Evaluate his responses to questions such as, "What day is it?" or "Where are you?"
    - (c) Repeat the AVPU.

- (3) Evaluate the casualty's level of consciousness and signs and symptoms.
  - (a) Brief periods of unconsciousness--concussion, substance abuse, or fainting.
  - (b) Confusion or disorientation--a slight blow to the head, a concussion, insufficient oxygen, substance abuse, a psychiatric disorder, or an emotional disturbance.
  - (c) Deep coma--concussion, brain damage, a skull fracture, a severe blow to the head, or poisoning.
  - (d) Convulsions--insulin shock, epilepsy, or brain damage.
- (4) Check the patient's pupils.
  - (a) Observe the pupillary response to light.
  - (b) Evaluate the pupillary response.
    - 1. Dilated pupils--shock, unconsciousness, cardiac arrest, brain damage, substance abuse, or central nervous system disorder.
    - 2. Constricted pupils--head injury, stroke, or narcotic use.
    - 3. Unequal pupils--head injury.
    - 4. No response or eyes rolled back in head--death, coma, cataracts, or artificial eye.
- g. Check the casualty's neck. Observe and palpate areas for tenderness and deformities.
- h. Check the casualty's chest.
  - (1) Palpate the clavicles and shoulders for deformities.
  - (2) Check for wounds and normal chest expansion when the casualty inhales.
  - (3) Press firmly on the sternum to check for pain.
  - (4) Press gently on the lateral ribs to check for rib integrity.
- i. Check the casualty's abdomen.
  - (1) Observe for distention or wounds.
  - (2) Palpate the four quadrants for tenderness and rigidity.



- j. Check the casualty's pelvis.
    - (1) Observe for loss of bladder or bowel control.
    - (2) Palpate the iliac crest and pubis to check for pain.
  - k. Check the casualty's spine. Palpate from the base of the skull to the buttocks for tenderness, wounds, and deformity.
  - l. Check the casualty's legs and arms.
    - (1) Palpate the entire length for pain, wounds, deformities, and sensations.
    - (2) Ask the casualty about pain, tingling, numbness, and ability to move extremities.
    - (3) Check all pulses.
  - 5. Record the treatment given and observations noted on the Field Medical Card.
- NOTE:* Under clinical conditions, a very complete exam is possible. Under combat conditions or an emergency situation, such as with mass casualties, an incomplete or quick examination may be necessary.
- 6. Evacuate the casualty, if necessary.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, have another soldier act as the casualty. For steps 1 and 2, describe a general scenario to the soldier. The casualty must have more than one injury or condition. Wounds may be simulated using moulage or other available materials. A "conscious" casualty can be coached to show signs of such conditions as shock, and to respond to the soldier's questions about the location of pain and other symptoms of injury. The evaluator will cue the soldier during the survey of an "unconscious" casualty as to whether the casualty is breathing, and describe such conditions as shock to the soldier as he or she is making the checks.

*Brief soldier:* Tell the soldier to tell you what action he or she would take for each wound or condition identified.

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Perform a general survey of the scene.	P	F
2. Determine what injuries may be found based on the type of incident.	P	F
3. Perform a primary survey.	P	F
4. Perform a secondary survey.	P	F
5. Record the treatment given and the observations noted.	P	F
6. Evacuate the casualty, if necessary.	P	F
7. Do not cause further injury to the casualty.	P	F

**REFERENCES:** None

081-833-0045

**TREAT A CASUALTY WITH AN OPEN ABDOMINAL WOUND****CONDITIONS**

All other more serious injuries have been treated. Necessary materials and equipment: field dressings, cravats, scissors, gauze, saline solution, and intravenous (IV) equipment.

**STANDARDS**

Treat an open abdominal wound, minimizing the effects of the injury and stabilizing the casualty without causing additional injury.

**TRAINING/EVALUATION***Training Information Outline*

1. Treat for shock. (See task 081-833-0047.)

**WARNING**

The most important concern in the initial management of abdominal injuries is shock. Shock may be present initially or develop later. Neither the presence or absence of a wound, nor the size of the external wound are safe guidelines for judging the severity of the wound.

2. Position the casualty.

*NOTE:* If neither heavy internal bleeding nor perforated organs are present, the casualty is not in immediate danger.

- a. Place the casualty on his or her back (face up).
  - b. Flex the casualty's knees.
  - c. Maintain a patent airway.
  - d. Turn the casualty's head to the side and keep the airway clear if vomiting occurs.
3. Expose the wound.

**CAUTION**

Do not attempt to replace protruding internal organs or remove any protruding foreign objects.

4. Stabilize any protruding objects. (See task 081-833-0046.)

5. Apply a sterile abdominal dressing.

*NOTE:* Protruding abdominal organs should be kept moist to prevent the tissue from drying out. A moist, sterile dressing should be applied if available.

- a. Using the sterile side of the dressing, or other clean material, place any protruding organs near the wound.
- b. Ensure that the dressing is large enough to cover the entire mass of protruding organs or area of the wound.
- c. If large enough to cover the affected area, place the sterile side of the plastic wrapper directly over the wound.
- d. Place the dressing directly on top of the wound or plastic wrapper, if used.
- e. Tie the dressing tails loosely at the casualty's side.

**CAUTION**

Do not apply pressure on the wound or expose internal parts.

f. If two dressings are needed to cover a large wound, repeat steps 5a through 5e. Ensure that the ties of additional dressings are not tied over each other.

g. If necessary, loosely cover the dressings with cravats. Tie them on the side of the casualty opposite that of the dressing ties.

6. Do not cause further injury to the casualty.

- a. Do not touch any exposed organs with bare hands.
- b. Do not try to push any exposed organs back into the body.
- c. Do not tie the dressing tails tightly or directly over the dressing.

- d. Do not give the casualty food or water.

*NOTE:* Continue to survey the casualty, if necessary. (See task 081-833-0015.)

- 7. Prepare the casualty for evacuation.
  - a. Place the casualty on his or her back (face up) with the knees flexed.
  - b. If evacuation is delayed, check the casualty for signs of shock every 15 minutes.
- 8. Record the treatment given on the Field Medical Card.

### *Evaluation Guide*

Performance Measures	Results	
1. Treat for shock.	P	F
2. Position the casualty.	P	F
3. Expose the wound.	P	F
4. Stabilize any protruding objects.	P	F
5. Apply a sterile abdominal dressing.	P	F
6. Prepare the casualty for evacuation.	P	F
7. Record the treatment given on the Field Medical Card.	P	F
8. Do not cause further injury to the casualty.	P	F

**REFERENCES:** None

**081-833-0046**

**APPLY A DRESSING TO AN IMPALEMENT INJURY**

**CONDITIONS**

The casualty you are surveying has an impalement injury. All other more serious injuries have been treated. Necessary materials and equipment: field dressings, cravats, bandages, gauze, scissors, and splinting equipment.

**STANDARDS**

Immobilize an impaled object and minimize the effect of the injury without causing further injury to the casualty.

**TRAINING/EVALUATION**

*Training Information Outline*

**WARNING**

Do not exert any force on or attempt to remove the impaled object. Severe bleeding or nerve and muscle damage may result.

1. Prepare the casualty.
  - a. Tell the casualty to remain still and not to move the impaled object.
  - b. Expose the injury by cutting away or removing clothing or equipment around the wound site.
  - c. If the impalement injury is on an extremity, check the pulse distal to the injury site.
2. Immobilize the impaled object.

*NOTE:* If an assistant is available, one person should immobilize the object while the other applies the dressings and bandages.

**WARNING**

Do not exert force on the impaled object or the tissue directly adjacent to the edge of the impaled object.

- b. Cut two sterile dressings halfway through and place each one around the impaled object on opposite sides.

- c. Place a third sterile dressing, cut halfway through lengthwise, over the first two.
  - d. Use additional bulky materials or dressings to build up the area around the object.
3. Apply the support bandages.
- a. Apply the bandage over the bulky support material to hold it in place.
  - b. Apply the bandage tightly but not so tight as to impair circulation or breathing.

**WARNING**

Do not anchor the bandage on or exert pressure on the impaled object.

- c. Check the circulation after applying the support bandages.

*NOTE:* If a pulse was palpated in step 1c and it cannot be palpated after the bandage has been applied, the bandage must be loosened until a pulse can be palpated.

4. Immobilize the affected area with a splint or sling, if applicable.

**WARNINGS**

- 1. Do not anchor a splint or sling to the impaled object.
- 2. Avoid undue motion of the impaled object when applying a splint.

5. Check for a pulse distal to the injury site.
6. Treat for shock, if necessary.
7. Record the treatment on the Field Medical Card.
8. Evacuate the casualty.

***Evaluation Preparation***

*Setup:* For training and evaluation, have another soldier act as the casualty. Use a moulage set or similar materials to create a simulated impalement injury. You may also have another soldier assist in immobilizing the object.

*Brief soldier:* Tell the soldier to treat the casualty for an impalement injury and to direct the actions of the assistant, if applicable.

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Prepare the casualty.	P	F
2. Immobilize the impaled object.	P	F
3. Apply the support bandages.	P	F
4. Immobilize the affected area with a splint or sling, if applicable.	P	F
5. Check for a pulse distal to the injury site.	P	F
6. Treat for shock, if necessary.	P	F
7. Record the treatment on the Field Medical Card.	P	F
8. Evacuate the casualty.	P	F
9. Do not cause further injury to the casualty.	P	F

**REFERENCES:** None



081-833-0049

## TREAT A CASUALTY WITH A CLOSED CHEST WOUND

### CONDITIONS

All other more serious injuries have been treated. Necessary materials and equipment: cravats, field jacket, poncho, blanket, or similar material, and oxygen.

### STANDARDS

Treat a closed chest wound, minimizing the effects of the injury, without causing additional injury to the casualty.

### TRAINING/EVALUATION

#### *Training Information Outline*

1. Check the casualty for signs and symptoms of closed chest injuries.
  - a. Pleuritic pain that is increased by or occurs with respirations and is localized around the injury site.
  - b. Labored or difficult breathing.
  - c. Diminished or absent breath sounds.
  - d. Cyanotic lips, fingertips, or fingernails.
  - e. Rapid, weak pulse and low blood pressure.
  - f. Coughing up blood or bloody sputum.
  - g. Failure of one or both sides of the chest to expand normally upon inhalation.
  - h. Paradoxical breathing--the motion of the injured segment of a flail chest, opposite to the normal motion of the chest wall.
  - i. Enlarged neck veins.
  - j. Bulging tissue between the ribs and above the clavicles.
  - k. Tracheal deviation--shift of the trachea from the midline toward the unaffected side due to pressure buildup on the injured side.

1. Mediastinal shift--shift of the heart, great vessels, trachea, and esophagus from the midline to the unaffected side due to pressure buildup on the injured side.

**WARNING**

Evidence of mediastinal shift indicates excessive pressure within the chest cavity. Compression of the heart and great vessels will impair blood flow through the heart. Immediate relief of the pressure (chest decompression) must be accomplished by trained medical personnel or death will result.

2. Determine the type of injury.

a. Rib fracture--generally caused by a direct blow to the chest or compression of the chest. Severe coughing can also cause rib fracture.

(1) Signs and symptoms.

- (a) Pain is aggravated by respirations and coughing.
- (b) Crepitus is present.
- (c) The casualty will take a defensive posture to protect the injury.

(2) Complications.

- (a) Internal bleeding (hemothorax).
- (b) Shock.

(3) Treatment.

- (a) Use a sling and swathe to immobilize the affected side.
- (b) Administer oxygen as necessary.

*NOTE:* The broken rib may puncture the lung or the skin.

**WARNING**

Do not tape, strap, or bind the chest.

b. Flail chest involves three or more ribs fractured in two or more places or a fractured sternum.

- (1) Signs and symptoms.
  - (a) Severe pain at the site.
  - (b) Rapid shallow breathing.
  - (c) Paradoxical respirations.
- (2) Complications.
  - (a) Respiratory insufficiency.
  - (b) Traumatic asphyxia.
- (3) Treatment.
  - (a) Establish and maintain an airway.
  - (b) Administer oxygen.
  - (c) Assist the casualty's respirations, if necessary.
  - (d) Monitor the casualty for signs of hemothorax or tension pneumothorax, as necessary.
  - (e) Stabilize the flail segment using one of the following methods.
    1. Apply manual pressure.
    2. Tape a pillow, folded blanket, field jacket, or poncho in place.
    3. Place the casualty on the injured side.

**WARNING**

Do not wrap the casualty's chest with tape. This will interfere with the casualty's ability to breathe.

c. Hemothorax is caused by the bleeding from lacerated blood vessels in the chest cavity and/or lungs. It results in the accumulation of blood in the chest cavity but outside the lungs.

- (1) Signs and symptoms.
  - (a) Hypotension due to blood loss.
  - (b) Shock.

## STP 8-91B15-SM-TG

- (c) Cyanosis.
- (d) Tightness in the chest.
- (e) Mediastinal shift may produce deviated trachea away from the affected side.
- (2) Complications.
  - (a) Possibility of hypovolemic shock.
  - (b) Frequently accompanies a pneumothorax.
- (3) Treatment.
  - (a) Establish and maintain an airway.
  - (b) Administer oxygen, if necessary.
  - (c) Assist the casualty's breathing, as necessary.
- d. Injuries to the back of the chest can result from a direct blow on the back of the chest. Contusions or rib fractures may occur.

### **WARNING**

Spinal injury should be suspected.

- (1) Signs and symptoms.
  - (a) Rib fracture.
  - (b) Lacerations on the back.
  - (c) Muscle strain.
  - (d) Fractured scapula.
  - (e) Spinal injury.
  - (f) Respiratory distress.

(2) Complications.

- (a) Spinal injury.
- (b) Hemothorax.
- (c) Pneumothorax.

(3) Treatment.

*NOTE:* The main concern with this injury is the spine.

- (a) Establish and maintain an airway.

*NOTE:* Use the jaw thrust technique if a spinal injury is suspected.

- (b) Administer oxygen, if necessary.
- (c) Assist the casualty's respirations, if necessary.
- (d) Treat suspected spinal injuries. (See task 081-833-0092.)

e. Tension pneumothorax.

(1) Condition in which air enters the chest cavity (pleural space) through a hole in the lung(s), expanding the space with every breath the casualty takes.

- (2) The air becomes trapped and cannot escape.
- (3) Increased pressure in the chest causes the lung(s) to collapse.

(4) May result from the laceration of the lung by a broken rib or by spontaneous rupture of a bleb or lesion on the lung.

(5) Position the casualty for evacuation.

- (a) Conscious--in a comfortable position.
- (b) Unconscious--on the injured side.

(6) Treatment.

- (a) Establish and maintain an airway.
- (b) Administer oxygen, if available.

## STP 8-91B15-SM-TG

- (c) Assist the casualty's respirations, as necessary.
  - (d) Monitor the casualty for evidence of a mediastinal shift.
3. Treat the casualty for shock.
  4. Record the care provided on the appropriate form.
  5. Evacuate the casualty.

*NOTE:* Continue to survey the casualty, if necessary.

### *Evaluation Preparation*

*Setup:* For training and evaluation, have another soldier act as the casualty. To test step 1, have the soldier tell you the signs of a closed chest wound.

*Brief soldier:* Tell the soldier to treat a casualty with a closed chest wound. Tell the soldier whether the wound involves a simple rib fracture, a flail chest, a compression injury, an injury to the back of the chest, a pneumothorax, or a hemothorax.

### *Evaluation Guide*

Performance Measures	Results	
1. Check the casualty for signs and symptoms of closed chest injuries.	P	F
2. Determine the type of injury.	P	F
3. Initiate treatment for a closed chest injury.	P	F
4. Treat the casualty for shock.	P	F
5. Record the care provided on the appropriate form.	P	F
6. Evacuate the casualty.	P	F
7. Do not cause further injury to the casualty.	P	F

**REFERENCES:** None

081-833-0050

## **TREAT A CASUALTY WITH AN OPEN CHEST WOUND**

### **CONDITIONS**

All other more serious injuries have been treated. Necessary materials and equipment: scissors, adhesive tape, field dressings, padding, ace bandage, and cravats.

### **STANDARDS**

Treat an open chest wound, minimizing the effects of the injury. Seal the entry wound and exit wound.

### **TRAINING/EVALUATION**

#### *Training Information Outline*

1. Check the casualty for signs and symptoms of an open chest wound.
  - a. A "sucking" or "hissing" sound when the casualty inhales.
  - b. Difficulty breathing.
  - c. A puncture wound of the chest.
  - d. An impaled object protruding from the chest.
  - e. Froth or bubbles around the injury.
  - f. Coughing up blood or blood tinged sputum.
  - g. Pain in the chest or shoulder.
2. Expose the wound.
  - a. Cut or unfasten the clothing that covers the wound.
  - b. Disrupt the wound as little as possible.

*NOTE:* Do not remove clothing stuck to the wound.

**CAUTION**

Do not remove protective clothing in a contaminated environment. Mask the casualty. Cut back protective clothing so that the wound is exposed and the dressing can be applied.

3. Check for an exit wound.
  - a. Feel and/or look at the casualty's chest and back.
  - b. Remove the casualty's clothing, if necessary.
4. Seal the wound(s), covering the larger wound first.

*NOTE:* All penetrating chest wounds should be treated as if they were sucking chest wounds.

- a. Cut the dressing wrapper on one long and two short sides and remove the dressing.

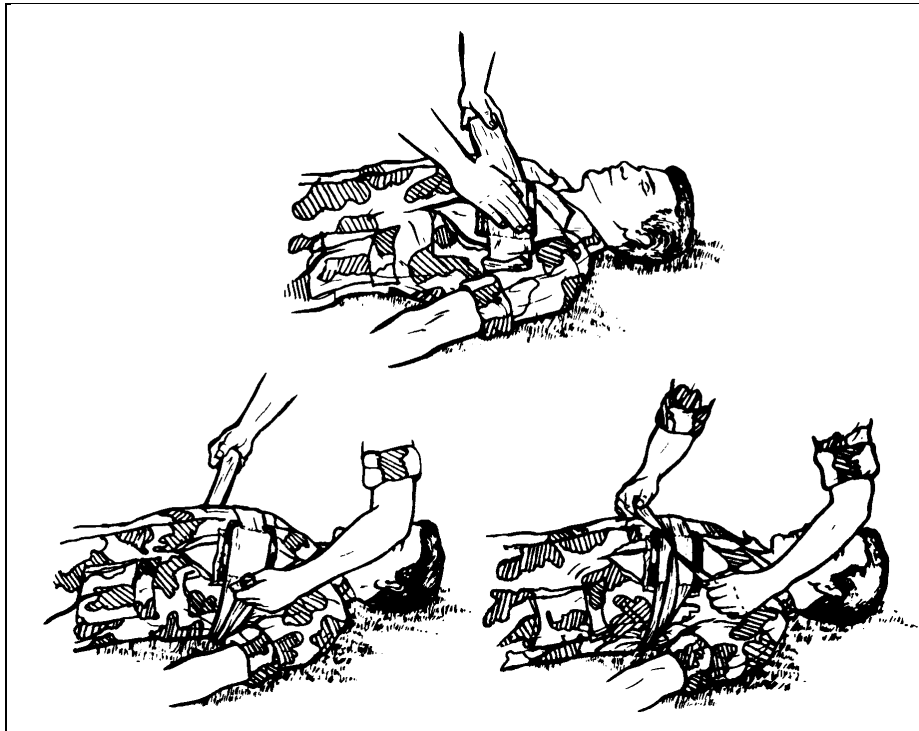
*NOTE:* In an emergency, any airtight material can be used. It must be large enough so it is not sucked into the chest cavity.

- b. Apply the inner surface of the wrapper to the wound when the casualty exhales.
- c. Ensure that the covering extends at least 2 inches beyond the edges of the wound.
- d. Seal by applying overlapping strips of tape to three sides of the plastic covering to provide a flutter-type valve.
- e. Cover the exit wound in the same way, if applicable.

*NOTE:* Assess the effectiveness of the flutter valve when the casualty breathes. When the casualty inhales, the plastic should be sucked against the wound, preventing the entry of air. When the casualty exhales, trapped air should be able to escape from the wound and out the untaped side of the dressing.

5. Dress the wound.
  - a. Place the field first aid dressing over the seal and tie the ends directly over the wound. (See Figure 3-13.)





**Figure 3-13**

- b. Use padding material and another dressing for additional pressure and stability, if required.
- c. Dress the exit wound in the same way, if applicable.

**CAUTION**

Ensure that the dressings are not tied so tightly that they interfere with the breathing process or the flutter-type valve.

- 6. Place the casualty on the injured side.
- 7. Monitor the casualty.
  - a. Monitor breathing and the wound seal.
  - b. Assess the effectiveness of the flutter valve.
  - c. Check vital signs.

## STP 8-91B15-SM-TG

- d. Observe for signs of shock.
8. Record the treatment on the appropriate form.

*NOTE:* Continue to survey the casualty, if necessary. (See task 081-833-0015.) The casualty should be evacuated by the most expedient means.

### *Evaluation Preparation*

*Setup:* For training and evaluation, have a mannequin or another soldier act as the casualty. Use a moulage kit or similar materials to simulate entry and exit wounds. To test step 1, have the soldier tell you the signs and symptoms of an open chest wound.

*Brief soldier:* Tell the soldier to treat a casualty for an open chest wound.

*NOTE:* Do not tell the soldier whether an exit wound exists.

### *Evaluation Guide*

Performance Measures	Results	
1. Check the casualty for signs and symptoms of an open chest wound.	P	F
2. Expose the wound.	P	F
3. Check for an exit wound.	P	F
4. Seal the wound(s), covering the larger wound first.	P	F
5. Dress the wound.	P	F
6. Place the casualty on the injured side.	P	F
7. Monitor the casualty.	P	F
8. Record the treatment on the appropriate form.	P	F
9. Do not cause further injury to the casualty.	P	F

**REFERENCES:** None

081-833-0052

**TREAT A CASUALTY WITH AN OPEN OR CLOSED HEAD INJURY****CONDITIONS**

The casualty you are surveying has a head injury. All other more serious injuries have been treated. Necessary materials and equipment: field dressings, cravats, stethoscope, sphygmomanometer, and intravenous (IV) setup.

**STANDARDS**

Treat a head injury, minimizing the effects of the injury and stabilizing the casualty without causing additional injury.

**TRAINING/EVALUATION***Training Information Outline***WARNING**

Treat casualties with any type of traumatic head injury or loss of consciousness carefully and move them no more than necessary.

1. Check for the signs and symptoms of head injuries.
  - a. Superficial wound.
    - (1) Lacerated, torn, ragged, or mangled skin tissue.
    - (2) Copious bleeding, possible exposed skull.

**WARNING**

Do not manipulate the wound to observe the skull.

- b. Closed head injury--caused by a direct blow to the head.

**WARNING**

Brain injury, leading to a loss of function or death, often occurs without evidence of a skull fracture or scalp injury. Because the skull cannot expand, swelling of the brain or a collection of fluid pressing on the brain can cause pressure. This can compress and destroy the brain tissue.

- (1) Deformity of the head.
- (2) Fluid or blood escaping from the nose and/or ear(s).
- (3) Periorbital discoloration (raccoon eyes).
- (4) Bruising behind the ears, over the mastoid process (battle sign).
- (5) Lowered pulse rate if the casualty has not lost a significant amount of blood.
- (6) Signs of increased intracranial pressure.
  - (a) Headache, nausea, and/or vomiting.
  - (b) Possible unconsciousness.
  - (c) Change in pupil size or symmetry.
  - (d) Lateral loss of motor nerve function--one side of the body becomes paralyzed.

*NOTE:* Lateral loss may not happen immediately but may occur later.

- (e) Change in the casualty's respiratory rate or pattern.
- (f) A steady rise in the systolic blood pressure if the casualty hasn't lost significant amounts of blood.
- (g) A rise in the pulse pressure (systolic pressure minus diastolic pressure).
- (h) Elevated body temperature.
- (i) Restlessness--indicates insufficient oxygenation of the brain.

- c. Concussion--caused by a violent jar or shock.

*NOTE:* A direct blow to the skull may bruise the brain.

- (1) Temporary unconsciousness followed by confusion.
  - (2) Temporary, usually short term, loss of some or all brain functions.
  - (3) The casualty has a headache or is seeing double.
  - (4) The casualty may or may not have a skull fracture.
- d. Contusion--an internal bruise or injury. It is more serious than a concussion. The injured tissue may bleed or swell. Swelling may cause increased intracranial pressure that may result in a decreased level of consciousness and even death.
- e. Open head injury.
- (1) Penetrating wound--an entry wound with no exit wound.
  - (2) Perforating wound--the wound has both entry and exit wounds.
  - (3) Visibly deformed skull.
  - (4) Exposed brain tissue.
  - (5) Possible unconsciousness.
  - (6) Loss of ability to move the extremities.
  - (7) Change in pupil size.
2. Check the casualty's vital signs.
3. Assess the casualty's level of consciousness using the AVPU scale.
- a. A--alert. The casualty responds spontaneously to stimuli and is able to answer questions in a clear manner.
  - b. V--verbal. The casualty does not respond spontaneously but is responsive to verbal stimuli.
  - c. P--pain. The casualty does not respond spontaneously or to verbal stimuli but is responsive to painful stimuli.
  - d. U--unresponsive. The casualty is unresponsive to any stimuli.
4. Assess the casualty's pupil size.
- a. Observe the size of each pupil.

## STP 8-91B15-SM-TG

*NOTE:* A variation of pupil size may indicate a brain injury. In a very small percentage of people, unequal pupil size is normal.

- b. Shine a light into each eye to observe the pupillary reaction to light.

*NOTE:* The pupils should constrict promptly when exposed to bright light. Failure of the pupils to constrict may indicate brain injury.

### 5. Assess the casualty's motor function.

- a. Evaluate the casualty's strength, mobility, coordination, and sensation.
- b. Document any complaints, weakness, or numbness.

*NOTE:* Progressive loss of strength or sensation is an important indicator of brain injury.

### 6. Treat the head injury.

- a. Treat a superficial head injury.
  - (1) Apply a dressing.
  - (2) Observe for abnormal behavior or evidence of complications.
- b. Treat a head injury involving deep trauma.
  - (1) Dress the head wound(s).
  - (2) Control bleeding.

#### **WARNING**

Do not apply pressure to or replace exposed brain tissue.

- (3) Splint the cervical spine.

#### **WARNING**

Assume every head injury casualty also has a spine injury and treat it accordingly until proven otherwise.

- (4) Maintain a patent airway.

- (5) Administer oxygen, if available.
- (6) Treat for shock.
- (7) Monitor the casualty for convulsions or seizures. (See task 081-831-0035.)
- (8) Position the casualty with the head elevated 6 inches to assist with the drainage of blood from the brain.

**CAUTION**

Do not give the casualty anything by mouth.

- 7. Continue to monitor the casualty and check and record the following at five minute intervals.
  - a. Level of consciousness.
  - b. Pupillary responsiveness and equality.
  - c. Vital signs.
  - d. Motor functions.
- 8. Record the treatment on the appropriate form.
- 9. Evacuate the casualty.

***Evaluation Preparation***

*Setup:* For training and evaluation, have another soldier act as the casualty. Use a moulage kit or similar materials to simulate a head wound. To test steps 1 and 6, coach the simulated casualty on how to answer the soldier's questions regarding such symptoms as headache. Tell the soldier what signs, such as changes in pupil size, the casualty is exhibiting.

*Brief soldier:* Tell the soldier to identify the type of head injury and treat the casualty for a head injury.

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Check for the signs and symptoms of head injuries.	P	F
2. Check the casualty's vital signs.	P	F
3. Assess the casualty's level of consciousness using the AVPU scale.	P	F
4. Assess the casualty's pupil size.	P	F
5. Assess the casualty's motor function.	P	F
6. Treat the head injury.	P	F
7. Continue to monitor the casualty at five-minute intervals.	P	F
8. Record the treatment on the appropriate form.	P	F
9. Evacuate the casualty.	P	F
10. Do not cause further injury to the casualty.	P	F

**REFERENCES:** None



081-833-0070

**ADMINISTER INITIAL TREATMENT FOR BURNS****CONDITIONS**

You are in a field environment. Necessary materials and equipment: field dressings, sterile dressings, Ringer's lactate or normal saline, and an intravenous (IV) setup.

**STANDARDS**

Administer initial treatment IAW the type and extent of the casualty's burns. Stabilize the casualty without causing further injury to the casualty or injuring self.

**TRAINING/EVALUATION***Training Information Outline*

1. Determine the cause of the burns.
  - a. Survey the scene.
  - b. Question the casualty and/or bystanders.
  - c. Determine if the casualty has been exposed to smoke, steam, or combustible products.
  - d. Determine if the cause was open flame, hot liquid, chemicals, or electricity.
  - e. Determine whether the casualty was struck by lightning.

*NOTE:* If the burn was caused by an explosion or lightning, the casualty may also have been thrown some distance from the original spot of the incident. He or she may, therefore, have associated internal injuries, fractures, or spinal injuries.

2. Stop the burning process.
  - a. Thermal burns.
    - (1) Have the casualty STOP, DROP, and ROLL.
      - (a) Do not permit the casualty to run, because this will fan the flames.
      - (b) Do not permit the casualty to stand, as the flames may be inhaled or the hair ignited.

(c) Place the casualty on the ground or floor and roll the casualty in a blanket or in dirt, and/or splash with water.

(2) Remove all smoldering clothing and articles that retain heat, if possible.

(3) Cut away clothing to expose the burned area.

#### **CAUTIONS**

1. Do not remove clothing that is stuck to the burned area. If the clothing and skin are still hot, immerse them in clean, cold water or cover them with a wet dressing, if available. Do not immerse the burned area for more than 10 minutes. Prolonged cold water immersion, particularly of an extensive burn, can cause hypothermia (loss of body heat).

2. Immerse third degree burns only if they are still burning. Infection is the greatest danger of a third degree burn. Immersion other than to stop the burning may increase the risk of infection.

b. Electrical burns.

(1) Turn off the current, if possible.

(2) If the current cannot be turned off, stand on a dry surface and move the casualty with nonconductive material such as rubber gloves or a wooden pole.

#### **WARNING**

Do not directly touch a casualty receiving a shock. To do so will conduct the current to you.

(3) If necessary and/or possible, remove the electrical source from the casualty.

#### **WARNING**

Electrical shock may cause the casualty to go into cardiac arrhythmia or arrest. Initiate CPR as appropriate.

c. Chemical burns.

#### **WARNING**

A chemical will burn as long as it is in contact with the skin.

(1) Flush the area of contact immediately with water. Do not delay flushing by removing the casualty's clothing first.

*NOTE:* If a solid chemical, such as lime, has been spilled on the casualty, brush it before flushing. A dry chemical is activated by contact with water and will cause more damage to the skin.

(2) Flush with cool water for 10 to 15 minutes while removing contaminated clothing or other articles.

*NOTE:* Flush longer for alkali burns because they penetrate deeper and cause more severe injury.

*NOTE:* Many chemicals have a delayed reaction. They will continue to cause injury even though the casualty no longer feels pain.

**WARNING**

Do not use a hard blast of water. Extreme water pressure can add mechanical injury to the skin.

d. White phosphorus burns.

*NOTE:* White phosphorous (WP) will stick to the skin and continue to burn until it is deprived of air. WP burns are usually multiple and deep, usually producing second and third degree burns.

(1) Deprive the WP of oxygen.

(a) Splash with a nonpetroleum liquid (such as water, mud, or urine).

(b) Submerge the entire area.

(c) Cover the affected area with a moistened cloth, if available, or mud.

(2) Remove the WP particles from the skin by brushing with a wet cloth or using forceps, stick, or knife.

**WARNING**

Do not use any type of petroleum product to smother the WP. This will cause it to be more rapidly absorbed into the body.

3. Maintain an open airway, if necessary. (See task 081-831-0018.)

*NOTE:* As long as 30 to 40 minutes may elapse before edema obstructs the airway and respiratory distress is noted.

## STP 8-91B15-SM-TG

- a. Check for signs and symptoms of inhalation injury.
    - (1) Facial burns.
    - (2) Singed eyebrows, eyelashes, and/or nasal hairs.
    - (3) Carbon deposits and/or redness in the mouth and/or oropharynx.
    - (4) Sooty carbon deposits in the sputum.
    - (5) Hoarseness, noisy inhalation, brassy sounding cough, or dyspnea.
  - b. Check for signs and symptoms of carbon monoxide poisoning.
    - (1) Dizziness, nausea, and/or headache.
    - (2) Cherry-red colored skin and mucous membranes.
    - (3) Tachycardia or tachypnea.
    - (4) Respiratory distress or arrest.
  - c. Administer humidified oxygen at a high flow rate. (See tasks 081-833-0018 and 081-833-0019.)
4. Determine the percent of body surface area (BSA) burned.
- a. Cut the casualty's clothing away from the burned areas.
  - b. Determine the percentage of BSA burned using the Rule of Nines. (See Figure 3-14.)

Rule of Nines		
1. Head and neck	=	9%
2. Anterior trunk	=	18%
3. Posterior trunk	=	18%
4. Upper extremities	=	18% (each 9%)
5. Lower extremities	=	36% (each 18%)
6. Perineum	=	1%

Figure 3-14

5. Determine the degree of the burns.

a. First degree.

- (1) Superficial skin only.
- (2) Red and painful, like a sunburn.

b. Second degree.

- (1) Partial thickness of the skin.
- (2) Penetrates the skin deeper than first degree.
- (3) Blisters and pain.
- (4) Some subcutaneous edema.

c. Third degree.

- (1) Damage to or the destruction of a full thickness of skin.
- (2) Involves underlying muscles, bones, or other structures.
- (3) The skin may look leathery, dry, and discolored (charred, brown, or white).
- (4) Nerve ending destruction causes a lack of pain.
- (5) Massive fluid loss.
- (6) Clotted blood vessels may be visible under the burned skin.
- (7) Subcutaneous fat may be visible.

**CAUTIONS**

- 1. Check for entry and exit burns when treating electrical burns and lightning strikes.
- 2. The amount of injured tissue in an electrical burn is usually far more extensive than the appearance of the wound would indicate. Although the burn wounds may be small, severe damage may occur to deeper tissues. (High voltage can destroy skin and muscles to such an extent that amputation may eventually be necessary.)

6. Treat for shock those casualties who have second or third degree burns of 20% BSA or more.

## STP 8-91B15-SM-TG

- a. Initiate treatment for hypovolemic shock. (See task 081-833-0047.)
- b. Keep the casualty flat.
- c. Initiate an IV. (See task 081-833-0033.)
  - (1) Use Ringer's lactate, if available. Normal saline is the second fluid of choice.
  - (2) Use a large gauge (#16 or #18) needle.
  - (3) Initiate the IV in an unburned area, if possible.
  - (4) Use a large peripheral vein.

*NOTE:* The presence of overlying burned skin should not deter the use of an accessible vein. The upper extremities are preferable to lower extremities.

- d. Infuse fluids for a casualty based on fluid replacement calculations.
  - (1) Calculate the casualty's body weight in kilograms (kg).
    - (a) Determine or estimate the casualty's body weight in pounds.
      - (b) Divide the casualty's body weight by 2.2. For example, the casualty weighs about 165 pounds:  $165 / 2.2 = 75$  kg.
    - (2) Calculate the amount of fluid to infuse per hour for the next eight hours.
      - (a) Determine the percentage of BSA burned. (See step 4b.) For example, the casualty's BSA burned is 36%.
        - (b) Multiply 1 milliliter of fluid (1.00 cc) by the percentage of BSA burned. For example,  $1.00 \text{ cc} \times 36 = 36 \text{ cc}$ .
        - (c) Multiply the above figure by the casualty's weight, found in step 6d(1). For example,  $36 \text{ cc} \times 75 \text{ kg} = 2700 \text{ cc}$ . The casualty will require this much fluid over the next eight hours.
        - (d) Divide the above figure by 8 to determine the amount of fluid to give per hour. For example,  $2700 / 8 = 337.5$ , rounded to 338 cc of fluid per hour (cc/hr).

- e. Assess the circulatory blood volume.

*NOTE:* Urine output is a reliable guide to assess circulating blood volume.

- (1) Measure the casualty's urine output in cc per hour.

- (2) Adjust the IV fluid flow to maintain 30 to 50 cc of urine output per hour.
7. Stabilize the casualty and perform a secondary survey.
  - a. Measure and record the casualty's vital signs.
  - b. Survey the casualty for associated injuries. (See task 081-833-0015.)
  - c. Check the distal circulation by checking pulses in all extremities.
8. Remove potentially constricting items such as rings and bracelets.

**CAUTION**

The swelling of burns on extremities can cause a tourniquet-like effect, and the swelling of a burned throat can impair breathing.

9. Apply cold soaks, if applicable.
  - a. Use for casualties with second degree burns of 10% BSA or less only.
  - b. Apply the soaks for 10 to 15 minutes only.

**CAUTION**

Do not immerse or apply cold water to a casualty with extensive burns.

10. Dress the burns.
  - a. Apply a dry sterile dressing to the burns.

**CAUTION**

Do not put ointment on the burns and do not break blisters.

- b. Cover extensive burns with a sterile sheet, if available, or clean linen.
11. Administer oxygen, if available. (See task 081-833-0019.)
12. Record the treatment given.
13. Evacuate the casualty.

***Evaluation Preparation***

*Setup:* For training and evaluation, have another soldier act as the casualty. You may use a moulage kit or similar material to simulate burns on the casualty, or you may describe to the soldier the area(s) of the body burned. Create a scenario which describes the cause and depth of the burns. For step 2, have the soldier describe what actions should be taken to prevent further injury. To test step 5, describe the depth of the burns and have the soldier tell you if they are first, second, or third degree. When testing step 6, have the soldier describe what actions should be taken when administering IV therapy, if necessary. When testing step 7, have the soldier describe what action is taken.

*Brief soldier:* Tell the soldier to determine the extent of the casualty's burns and the treatment required.

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Determine the cause of the burns.	P	F
2. Stop the burning process.	P	F
3. Maintain the airway, if necessary.	P	F
4. Determine the percent of BSA burned.	P	F
5. Determine the degree of the burns.	P	F
6. Treat the casualty for shock, if necessary.	P	F
7. Stabilize the casualty and perform a secondary survey.	P	F
8. Remove potentially constricting items.	P	F
9. Apply cold soaks, if applicable.	P	F
10. Dress the burns.	P	F
11. Administer oxygen, if available.	P	F
12. Record the treatment given.	P	F
13. Evacuate the casualty.	P	F
14. Do not cause further injury to the casualty.	P	F

**REFERENCES:** None



081-833-3026

**STABILIZE A CASUALTY WITH INHALATION BURNS****CONDITIONS**

Necessary materials and equipment: Ringer's lactate, intravenous (IV) setup, oxygen tank, face mask, nasal prongs, nasogastric tube, endotracheal tube, sphygmomanometer, stethoscope, and urinary catheter kit.

**STANDARDS**

Complete all the steps necessary to stabilize a casualty with inhalation burns without causing infection or unnecessary injury to the casualty.

**TRAINING/EVALUATION***Training Information Outline*

1. Check for symptoms of inhalation burns.

*NOTE:* Inhalation burns are potentially one of the most lethal types of injuries, especially when there is a cutaneous injury associated with the respiratory tract burn.

- a. Edema of the face and neck.
- b. Singed nasal hairs.
- c. Carbonaceous sputum (due to necrosis of lung tissue).
- d. Burned mucosa in the mouth and throat (redness, swelling).
- e. Dyspnea.
- f. Hoarseness.
- g. Depressed mentation.
- h. Stridor--a harsh, high pitched respiratory sound, indicating laryngeal obstruction.

**CAUTION**

The presence of stridor is considered a medical emergency.

## **STP 8-91B15-SM-TG**

2. Maintain the casualty's airway.
    - a. Check for airway restriction by looking and listening for forced efforts in breathing and wheezing or crowing sounds.
    - b. Open the airway if it is restricted.
    - c. Intubate the casualty if he or she is unconscious or has severe burns of the face and neck. (See tasks 081-830-3015 and 081-830-3016.)
    - d. Perform a cricothyroidotomy if the airway is obstructed and attempts at intubation are unsuccessful or intubation equipment is unavailable. (See tasks 081-833-3005 and 081-833-3006.)
  3. Treat for shock.
  4. Administer humidified oxygen.
  5. Administer an IV infusion. (See task 081-833-0033.)
    - a. Administer Ringer's lactate through a large bore needle.
    - b. Calculate and adjust the IV fluid rate, as necessary, for fluid replacement.
  6. Perform urinary catheterization. (See tasks 081-833-3025 and 081-833-3017.)
  7. Perform nasogastric intubation. (See tasks 081-833-3022 and 081-833-3024.)
  8. Maintain the casualty in an upright position if he or she is alert and the blood pressure is adequate.
- NOTE:* Maintaining a casualty in the upright position aids in decreasing edema in the head and neck area due to the principles of gravity.
9. Record the treatment given on the Field Medical Card.
  10. Evacuate the casualty as soon as possible.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, have another soldier act as the casualty. A moulage kit or other material may be used to simulate burns on the casualty.

*Brief soldier:* For those portions of this task which cannot be performed on a simulated casualty, have the soldier tell you what he or she would do. Tell the soldier to stabilize a casualty with inhalation burns.

*Evaluation Guide*

<b>Performance Measures</b>	<b>Results</b>	
1. Check for symptoms of inhalation burns.	P	F
2. Maintain the casualty's airway.	P	F
3. Treat for shock.	P	F
4. Administer humidified oxygen.	P	F
5. Administer an IV infusion.	P	F
6. Perform urinary catheterization.	P	F
7. Perform nasogastric intubation.	P	F
8. Maintain the casualty in an upright position if he or she is alert and the blood pressure is adequate.	P	F
9. Record the treatment given on the Field Medical Card.	P	F
10. Evacuate the casualty as soon as possible.	P	F
11. Do not cause further injury to the casualty.	P	F

**REFERENCES:** None

**081-833-0048**

**MANAGE AN UNCONSCIOUS CASUALTY**

**CONDITIONS**

You have an unconscious casualty in a field environment. You are not in an NBC environment. Necessary materials and equipment: blanket, field jacket, poncho, Ringer's lactate, and Field Medical Card.

**STANDARDS**

Manage and stabilize an unconscious casualty and arrange prompt evacuation.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Establish unresponsiveness.
2. Establish and maintain an open airway.

**CAUTION**

Maintain C-spine control. Suspect C-spine injury with trauma involving the head and neck, motor vehicle accidents (MVAs), falls, and diving accidents.

- a. Open the airway. (See task 081-831-0018.)
  - b. Clear any upper airway obstruction. (See task 081-831-0019.)
  - c. Insert an oropharyngeal airway, if necessary, to maintain the airway. (See task 081-833-0016.)
  - d. Perform artificial respiration if breathing is absent. (See task 081-831-0048.)
3. Survey the casualty. (See task 081-833-0015.)
  4. Position the casualty.
    - a. Place the casualty on his or her side or face down, if the injury permits, to prevent aspiration of vomitus.
    - b. Maintain good body alignment by using padding for head and limb support. Use a folded or rolled blanket, field jacket, or poncho.

- c. In extended care situations, turn the casualty from side to side every hour.

*NOTE:* Protect the casualty against extremes of heat or cold.

- 5. Observe the casualty.

- a. Check for drainage of blood or cerebrospinal fluid (CSF) from the ears and nose.

**WARNING**

Do not attempt to control cerebrospinal/bloody drainage with a dressing. The dressing may cause increased pressure on the brain and collection of fluids between the brain and skull.

- b. Take the vital signs.

*NOTE:* Check the vital signs every 15 to 20 minutes and record the data on the Field Medical Card.

- c. Assess the casualty's level of consciousness using the AVPU scale.

(1) A--alert. The casualty responds spontaneously to stimuli and is able to answer questions in a clear manner.

(2) V--verbal. The casualty does not respond spontaneously, but is responsive to verbal stimuli.

(3) P--pain. The casualty does not respond spontaneously or to verbal stimuli but is responsive to painful stimuli.

(4) U--unresponsive. The casualty is unresponsive to any stimuli.

*NOTE:* Even if the casualty is unresponsive, assume the casualty can hear you, and explain the procedures.

- d. Assess the casualty's pupils.

(1) Observe the size of each pupil.

## STP 8-91B15-SM-TG

*NOTE:* A variation of pupil size may indicate a brain injury. In a very small percentage of people, unequal pupil size is normal.

- (2) Shine a light into each eye to observe the pupillary reaction to light.

*NOTE:* The pupils should constrict promptly when exposed to bright light. Failure of the pupils to constrict may indicate brain injury.

- e. Check movement of the extremities.

*NOTE:* Record which movements are spontaneous and which are stimulus related.

- f. Observe for seizure activity.

6. Obtain the casualty's history, if possible.

- a. Events immediately preceding current condition.
- b. Recent illness or infection.
- c. History of epilepsy, diabetes, or other medical conditions.
- d. Prior periods of unconsciousness.
- e. Drug or alcohol abuse (evacuate any medications with the casualty).

7. Initiate an IV of Ringer's lactate and run it slowly to keep the vein open (TKO). (See task 081-833-0033.)

8. Administer supplemental oxygen without pressure, if available.

9. Record the treatment on the Field Medical Card.

10. Evacuate the casualty.

*NOTE:* An unconscious casualty should have an artificial airway inserted prior to evacuation and must be constantly monitored during evacuation.

*Evaluation Guide*

Performance Measures	Results	
1. Establish unresponsiveness.	P	F
2. Establish and maintain an open airway.	P	F
3. Survey the casualty.	P	F
4. Position the casualty.	P	F
5. Observe the casualty.	P	F
6. Obtain the casualty's history.	P	F
7. Initiate an IV.	P	F
8. Administer oxygen, if available.	P	F
9. Record the treatment.	P	F
10. Evacuate the casualty.	P	F

**REFERENCES:** None

**081-833-0103**

**PROVIDE CARE FOR A SOLDIER WITH SYMPTOMS OF BATTLE FATIGUE**

**CONDITIONS**

A soldier in a combat environment displays signs and symptoms of battle fatigue.

**STANDARDS**

Classify the degree of battle fatigue and treat the soldier accordingly.

**TRAINING/EVALUATION**

*Training Information Outline*

*NOTE:* Battle fatigue refers to combat stress symptoms and reactions which may manifest as emotional and/or physical conditions. The soldier's mission performance may not be affected. Battle fatigue is considered a "normal" condition which could occur in anyone subjected to the physical and emotional stress of combat.

1. Identify contributing causes of battle fatigue.

*NOTE:* These are factors that have been historically identified as contributors to increasing battle fatigue rates.

- a. Sudden exposure to the intense fear, stimuli, and life/death consequences of battle.
- b. Cumulative exposure to dangers, responsibilities, and consequences of combat, including repeated grief and guilt over loss of comrades, friends, or patients.

*NOTE:* This may lead to the sense that one's own luck, skill, and courage have been used up.

- c. Physical stressors.
  - (1) Sleep loss.
  - (2) Lack of food and/or water.
  - (3) Physical exhaustion or excessive physical demands.
  - (4) Inclement weather.
  - (5) Lack of facilities for personal hygiene.



- (6) Environmental illnesses.
  - (7) Cumulative exposure to combat conditions (noise, odor, discomfort).
- d. Psychosocial factors.
  - (1) Worry about family members and friends.
  - (2) Homefront worries (debts, "Dear John" letters, family illness/death).
  - (3) Lack of confidence in self, leaders, comrades, and/or equipment.
- 2. Check the casualty for signs and symptoms of battle fatigue.
  - a. Simple fatigue.
    - (1) Loss of initiative.
    - (2) Tiredness.
    - (3) Indecisiveness.
    - (4) Inattention.
  - b. Anxiety
    - (1) Marked startle response.
    - (2) Tremors.
    - (3) Sweating.
    - (4) Insomnia with terror dreams.
    - (5) Rapid heartbeat.
  - c. Depression.
    - (1) Self-doubt.
    - (2) Self-blame.
    - (3) Hopelessness.
    - (4) Grief.

## STP 8-91B15-SM-TG

- (5) Bereavement.
- d. Memory loss.
  - (1) Ranges from inability to remember recent instruction to loss of memory of well learned skills.
  - (2) Loss of memory of a traumatic event or period of time.
  - (3) Total amnesia or fugue state (soldier leaves his post, forgets his own past, goes somewhere else, and may assume a new identity).
- e. Physical function disturbance.

*NOTE:* These symptoms are not due to a physical cause and may have a clear symbolic relationship to a specific trauma or conflict of motivation.

- (1) Motor functions.
  - (a) Weakness or paralysis of hands, limbs, or body.
  - (b) Gross tremors.
  - (c) Sustained contractions of muscles.
- (2) Sensory functions.
  - (a) Visual symptoms--tunnel vision or total blindness.
  - (b) Auditory symptoms--dizziness, ringing in the ears, deafness.
  - (c) Tactile changes--loss of sensations or abnormal sensations.
  - (d) Speech--stuttering, hoarseness, or muteness.

### 3. Classify battle fatigue cases.

*NOTE:* Classification labels are based on where the soldiers can be treated and, therefore, depend as much on the situation of the unit as on the symptoms of the soldier. The classification has only transient significance due to the quickly changing nature of the battle fatigue symptoms.

- a. Duty--can be treated within the small unit while remaining on duty status.
- b. Rest--treated in a nonmedical support unit on a limited duty status for one to two days.

- c. Hold--requires holding for restorative treatment in the medical unit where the soldier is being evaluated.
  - d. Refer--requires transfer to the next echelon medical facility for further evaluation.
4. Use basic treatment principles for battle fatigue.

*NOTE:* The acronym "PIES" is a method of remembering how to treat soldiers with battle fatigue.

- a. Proximity--treat as close to the soldier's unit and the battle as possible to reduce overevacuation.
  - b. Immediacy--treat immediately, without delay.
  - c. Expectancy--express positive expectation of a full, rapid recovery.
  - d. Simplicity--use simple, brief methods to restore physical well-being and self-confidence and use nonmedical terminology and techniques with the soldier.
5. Perform appropriate treatment interventions for battle fatigue.
- a. Maintain a military atmosphere.
    - (1) Have the soldier dress in a field uniform.
    - (2) Have the soldier maintain his or her field equipment.
    - (3) Keep the soldier busy with physical exercise, useful work details, and military training.
    - (4) Maintain appropriate military rank distinctions and courtesies.
  - b. Encourage the soldier to:
    - (1) Sleep or rest.
    - (2) Eat and drink to replenish lost fluids.
    - (3) Shower and clean up, if possible.
  - c. Reassure the soldier that other soldiers have had the same experience and symptoms and have recovered and returned to duty.
  - d. Encourage the soldier to talk about what has happened and about his or her emotions and unacceptable feelings.
    - (1) Maintain an accepting attitude.

## STP 8-91B15-SM-TG

- (2) Assist the soldier in finding a more adaptive perspective to what has happened.
- (3) Focus on lessons learned and alternative methods of coping.
- e. Recognize that some physical or mental illnesses may resemble battle fatigue.
  - (1) Hypothermia.
  - (2) Blunt trauma injury.
  - (3) Substance abuse.
  - (4) Laser eye injury.
  - (5) Nerve agent or atropine poisoning.
  - (6) Psychiatric and personality disorders.

### *Evaluation Guide*

#### **Performance Measures**

#### **Results**

- |  |   |   |
|--|---|---|
| 1. Identify contributing causes of battle fatigue.                 | P | F |
| 2. Check the soldier for signs and symptoms of battle fatigue.     | P | F |
| 3. Classify the battle fatigue case.                               | P | F |
| 4. Use basic treatment principles for battle fatigue.              | P | F |
| 5. Perform appropriate treatment interventions for battle fatigue. | P | F |

**REFERENCES:** None

081-833-0054

**IRRIGATE EYES****CONDITIONS**

You have performed a patient care handwash. Necessary materials and equipment: draping materials, catch basin, light source, gauze or cotton balls, irrigating syringe or similar equipment, gloves, and irrigating solution (normal saline, water, or other prescribed solution).

**STANDARDS**

Irrigate the eyes without contaminating or injuring the eyes.

**TRAINING/EVALUATION***Training Information Outline*

1. Identify the casualty and explain the procedure.
2. Verify the type, strength, and expiration date of the medication, as appropriate.

**CAUTION**

Do not irrigate an eye that has an impaled object.

3. Ask the casualty to remove contact lenses or glasses, if necessary.
4. Position the casualty.
  - a. If lying on the back, tilt the head slightly to the side that is to be irrigated.
  - b. If seated, tilt the head to the side that is to be irrigated, and slightly backward.
5. Position the equipment.
  - a. Drape the areas of the casualty that may be splashed by the solution.
  - b. Place a catch basin next to the face on the affected side.
  - c. Position the light so that it does not shine directly into the casualty's eyes.
6. Put on gloves.

**WARNING**

Wear gloves for self-protection against transmission of contaminants whenever handling body fluids.

7. Clean the eyelids with gauze or cotton balls, and rinse debris from the outer eye.
8. Separate the eyelids using the thumb and forefinger, and hold the lids open.

**CAUTION**

Do not put pressure on the eyeball.

9. Irrigate the eye.
  - a. Hold the irrigating tip 1 to 1 1/2 inches away from the casualty's eye.
  - b. Direct the irrigating solution gently from the inner canthus to the outer canthus.
  - c. Use only enough pressure to maintain a steady flow of solution and to dislodge the secretions or foreign bodies.
  - d. Instruct the casualty to look up to expose the conjunctival sac and lower surface of the eye.
  - e. Instruct the casualty to look down to expose the upper surface of the eye.
10. Dry the area around the eye by gently patting with gauze sponges.

**CAUTION**

Do not touch the eye.

11. Remove the gloves, and perform a patient care handwash.
12. Record the treatment given on the appropriate form.
13. Do not injure or contaminate the eye.

*Evaluation Guide*

<b>Performance Measures</b>	<b>Results</b>	
1. Identify the casualty and explain the procedure.	P	F
2. Verify the type, strength, and expiration date of the medication, as appropriate.	P	F
3. Ask the casualty to remove contact lenses or glasses, if necessary.	P	F
4. Position the casualty.	P	F
5. Position the equipment.	P	F
6. Put on gloves.	P	F
7. Clean the eyelids with gauze or cotton balls, and rinse debris from the outer eye.	P	F
8. Separate the eyelids using the thumb and forefinger, and hold the lids open.	P	F
9. Irrigate the eye.	P	F
10. Dry the area around the eye by gently patting with gauze sponges.	P	F
11. Remove the gloves, and perform a patient care handwash.	P	F
12. Record the treatment given on the appropriate form.	P	F
13. Do not injure or contaminate the eye.	P	F

**REFERENCES:** None

**081-833-0056**

## **TREAT FOREIGN BODIES OF THE EYE**

### **CONDITIONS**

You have performed a patient care handwash. Necessary materials and equipment: cotton-tipped swabs, clean cloth, sterile irrigation solution (normal saline, water, or other prescribed solution), bandages, and a paper cup or cardboard cone.

### **STANDARDS**

Treat foreign bodies of the eye, minimizing the effects of the injury without causing additional injury to the eye.

### **TRAINING/EVALUATION**

#### *Training Information Outline*

#### **WARNING**

Wear gloves for self-protection against transmission of contaminants whenever handling body fluids.

1. Locate the foreign bodies.
  - a. Method one.
    - (1) Pull the lower lid down.
    - (2) Tell the casualty to look up and to both sides and check for foreign bodies.
    - (3) Pull the upper lid up.
    - (4) Tell the casualty to look down and to both sides and check for foreign bodies.
  - b. Method two.
    - (1) Tell the casualty to look down.
    - (2) Grasp the casualty's upper eyelashes and gently pull the eyelid away from the eyeball.



(3) Place a cotton-tipped swab horizontally along the outer surface of the upper lid and fold the lid back over the swab.

(4) Look for the foreign bodies or damage to the eyeball.

**CAUTION**

If the foreign bodies cannot be located, bandage both eyes and seek further medical aid immediately.

2. Remove the foreign bodies.

**CAUTION**

Do not put pressure on the eyeball.

- a. Small foreign body on an anterior surface.
  - (1) Hold the casualty's eye open.
  - (2) Irrigate the eye.
- b. Foreign body stuck to the cornea or lying under the upper or lower eyelid.
  - (1) For a foreign body under the lower eyelid, pull the lower lid down.
  - (2) For a foreign body under the upper eyelid, pull the upper lid up.
  - (3) Remove the foreign body with a moistened, sterile cotton-tipped swab.

**CAUTION**

Bandage both eyes if foreign bodies are not easily removed by these methods or if there is pain or loss of vision in the eye. Seek further medical aid immediately.

*NOTE:* In hazardous conditions, leave the good eye uncovered long enough to ensure the casualty's safety.

- c. Foreign body stuck or impaled in the eye.

**CAUTION**

Do not attempt to remove a foreign body stuck to or sticking into eyeball. A physician must remove such objects.

- (1) Apply a dry, sterile dressing to support the object.

*NOTE:* This will help prevent further contamination and minimize movement of the object.

- (2) Cover the injured eye with a paper cup or cardboard cone.
- (3) Cover the uninjured eye with a dry dressing or eye patch.

*NOTE:* In hazardous conditions, leave the good eye uncovered long enough to ensure the casualty's safety.

- (4) Reassure the casualty by explaining why both eyes are being covered.

*NOTE:* The eyes move together. If the casualty uses (moves) the uninjured eye, the injured eye will move as well. Covering both eyes will keep them still and will prevent undue movement on the injured side.

- (5) Seek further medical aid immediately.

3. Obtain details about the injury.

- a. Source and type of the foreign bodies.
- b. Whether the foreign bodies were wind-blown or high velocity.
- c. Time of onset and length of discomfort.
- d. Any previous injuries to the eye.

4. Record the procedure on the appropriate form.

5. Evacuate the casualty, as required.

6. Do not cause additional injury to the eye.

- a. Do not probe for foreign bodies.
- b. Do not put pressure on the eyeball.
- c. Do not remove an impaled object.

*Evaluation Guide*

Performance Measures	Results	
1. Locate the foreign bodies.	P	F
2. Remove the foreign bodies.	P	F
3. Obtain details about the injury.	P	F
4. Record the procedure on the appropriate form.	P	F
5. Evacuate the casualty, as required.	P	F
6. Do not cause additional injury to the eye.	P	F

**REFERENCES:** None

**TREAT LACERATIONS, CONTUSIONS, AND EXTRUSIONS OF THE EYE**

**CONDITIONS**

You have performed a patient care handwash. Necessary materials and equipment: eye pads, field dressings, padding materials, scissors, and sterile water or sterile normal saline.

**STANDARDS**

Treat an eye injury, minimizing the effects of the injury, without causing additional injury to the eye.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Position the casualty and remove his or her headgear, if necessary.
  - a. Conscious--seated.
  - b. Unconscious--lying on his or her back with the head slightly elevated.
2. Examine the eyes for the following:
  - a. Objects protruding from the globe.
  - b. Swelling of or lacerations on the globe.
  - c. Bloodshot appearance of the sclera.
  - d. Bleeding.
    - (1) Surrounding the eye.
    - (2) Inside the eyeball.
    - (3) Coming from the eyeball.
  - e. Contact lenses. Ask the casualty if he or she is wearing contact lenses but do not force the eyelids open. Record that they are being worn.
  - f. Extrusion (the eye is protruding from the socket).

3. Categorize the injury.
  - a. Injury to the tissue surrounding the eye (lacerations and contusions).
  - b. Injury to the eyeball.
  - c. Extrusion or avulsion.
  - d. Protruding (impaled) objects.
4. Treat the injury.
  - a. Lacerations and contusions of tissue surrounding the eye.
    - (1) Close the lid of the affected eye.
    - (2) Cover the injury with an eye pad or a small sterile dressing.

**CAUTION**

Do not put pressure on the eyeball.

- (3) Cover torn eyelids with a loose dressing.
    - (4) Place a field dressing over the eye pad or dressing of the affected eye.
  - b. Injury to the eyeball.
    - (1) Cover the injured eye with an eye pad.
    - (2) Place a field dressing over the eye pad.
    - (3) Cover the uninjured eye to prevent sympathetic eye movement.

*NOTE:* In hazardous conditions, leave the good eye uncovered long enough to ensure the casualty's safety.

- (4) Tell the casualty not to squeeze the eyelids together.
  - c. Extrusion or avulsion.

**CAUTION**

Do not attempt to reposition the eyeball or replace it in the socket.

## STP 8-91B15-SM-TG

(1) Position the casualty face up.

(2) Cut a hole in several layers of dressing material, and then moisten it. Use sterile liquid, if available.

(3) Place the dressing so the injured globe protrudes through the hole, but does not touch the dressing. The dressing should be built up higher than the globe.

*NOTE:* If available, place a paper cup or cone-shaped piece of cardboard over the eye. Do not apply pressure to the injury site. Apply roller gauze to hold the cup in place.

(4) Cover the uninjured eye to prevent sympathetic eye movement.

*NOTE:* In hazardous conditions, leave the good eye uncovered long enough to ensure the casualty's safety.

d. Protruding object. (See task 081-833-0056.)

### CAUTION

Do not attempt to remove the protruding object.

(1) Immobilize the object.

(2) Dress the injured eye.

(3) Cover the uninjured eye to prevent sympathetic movement.

*NOTE:* In hazardous conditions, leave the good eye uncovered long enough to ensure the casualty's safety.

5. Record the procedure on the appropriate form.

6. Evacuate the casualty.

a. Transport the casualty on his or her back, with the head elevated and immobilized.

b. Evacuate eyeglasses with the casualty, even if they are broken.

### *Evaluation Preparation*

*Setup:* For training and evaluation, have another soldier act as the casualty. Use a moulage kit or similar material to simulate the injury, or describe the type of injury to the soldier.

*Brief soldier:* Tell the soldier to treat the eye injury.

*Evaluation Guide*

Performance Measures	Results	
1. Position the casualty.	P	F
2. Examine the eyes.	P	F
3. Categorize the injury.	P	F
4. Treat the injury.	P	F
5. Record the procedure on the appropriate form.	P	F
6. Evacuate the casualty.	P	F
7. Do not cause further injury to the casualty.	P	F

**REFERENCES:** None

**081-833-0058**

**TREAT BURNS OF THE EYE**

**CONDITIONS**

All other more serious injuries have been treated. You have performed a patient care handwash. Necessary materials and equipment: irrigation equipment, irrigation solution, and field dressings.

**STANDARDS**

Treat burns of the eyes, stabilizing the casualty without causing further injury to the casualty.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Reassure the casualty and check for signs and symptoms to determine the type of burns.
  - a. Chemical--such as acid, alkali, or petroleum.

**CAUTION**

The chemical may stick to the eye.

- (1) Pain and redness.
    - (2) Watering or tearing.
    - (3) Possible erosion of the corneal surface.
  - b. Radiant burns.
    - (1) Electric burns--electric welding processor.
      - (a) Gritty feeling.
      - (b) Severe pain.
      - (c) Inability to tolerate light.
      - (d) Redness, swelling.



- (e) Watering or tearing.
- (f) Immediate decrease in vision.

*NOTE:* Electrical burns often do not appear until several hours after exposure.

- (2) Laser burns--bright, visible light and invisible light such as ultraviolet or infrared.

- (a) Immediate decrease in vision.
- (b) No pain.

c. Thermal burns.

- (1) Charred or swollen eyelids.
- (2) Singed eyelashes.
- (3) Pain or irritation.

2. Treat the burn.

a. Chemical burn.

- (1) Gently hold the casualty's eye(s) open.
- (2) Tilt the casualty's head toward the affected side if only one eye is involved.
- (3) Irrigate the eye(s) for 5 minutes for any chemical and for 20 minutes if the chemical is an alkali, such as Draino, lye, or oil.

*NOTE:* Irrigate the eye(s) with sterile water or sterile normal saline, if available. If not available, use any potable water.

**CAUTION**

Do not attempt to neutralize the chemical.

- (4) Cover the injured eye with a clean, sterile dressing.

b. Radiant energy burn (electric/laser).

- (1) No specific treatment is recommended.

## STP 8-91B15-SM-TG

- (2) Bandage the eyes with sterile, moist pads.

*NOTE:* In a combat environment, the eyes may have to remain uncovered so the casualty can see to get away from danger.

- (3) Avoid further light exposure.
- (4) Evacuate the casualty for further examination.

c. Thermal burn.

- (1) Do not bandage the eyes.

*NOTE:* Burned eyelids swell to protect the underlying eyes. If the patient can be evacuated immediately, the eyes may be loosely covered with sterile dressings moistened with sterile saline.

- (2) Protect the casualty from exposure to light.

### WARNING

Casualties with severe burns to the eyes may have additional respiratory burns due to spontaneous inhalation.

3. Record the treatment given on the appropriate forms.
4. Evacuate the casualty.

### *Evaluation Guide*

#### Performance Measures

#### Results

- |   |   |   |
|---|---|---|
| 1. Reassure the casualty and check for signs and symptoms to determine the type of burns. | P | F |
| 2. Treat the burn.  | P | F |
| 3. Record the treatment given on the appropriate forms.                                   | P | F |
| 4. Evacuate the casualty.   | P | F |

**REFERENCES:** None

081-833-0060

## APPLY A ROLLER BANDAGE

### CONDITIONS

Necessary materials and equipment: roller bandages, tape, and scissors.

### STANDARDS

Select and apply the appropriate bandage and wrap without causing further injury to the casualty.

### TRAINING/EVALUATION

#### *Training Information Outline*

1. Select the appropriate bandage material for the injury.

*NOTE:* The width of the bandage to be used is determined by the size of the part to be covered. As a general rule, the larger the part or area, the wider the bandage.

- a. Use gauze or a flex roller for bleeding injuries of the forearm, upper arm, thigh, and lower leg.
- b. Use a flexible roller bandage (Kling or Kerlix) for bleeding injuries of the hand, wrist, elbow, shoulder, groin, knee, ankle, and foot.
- c. Use an elastic roller bandage for amputations, arterial bleeding, sprains, and torn muscles.
  - (1) Hand - 2 inch bandage.
  - (2) Lower arm, lower leg, and foot - 3 inch bandage.
  - (3) Thigh and chest - 4 to 6 inch bandage.

*NOTE:* Elastic rollers bandages may be used wherever pressure support or restriction of movement is needed. They should not be used to secure dressings.

2. Prepare the patient for bandaging.
  - a. Position the body part to be bandaged in a normal resting position (position of function).

*NOTE:* Bending a bandaged joint changes the pressure of the bandage in places of stress (elbow, knee, ankle).

- b. Ensure that the body part that is to be bandaged is clean and dry.

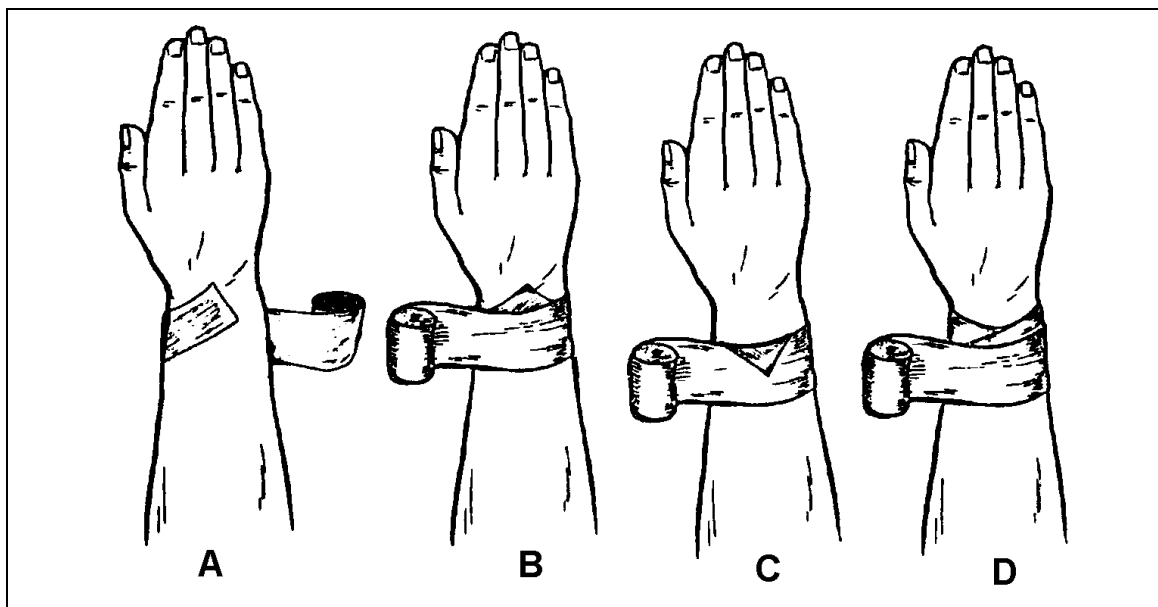
- c. Place pads over bony places or between the skin surfaces to be bandaged (such as fingers and armpits).

3. Apply the anchor wrap.

**CAUTION**

Do not wrap too tightly. The roller bandage may act as a tourniquet on an injured limb, causing further damage.

- a. Lay the bandage end at an angle across the area to be bandaged. (See Figure 3-15A.)
- b. Bring the bandage under the area, back to the starting point, and make a second turn. (See Figure 3-15B.)
- c. Fold the uncovered triangle of the bandage end back over the second turn. (See Figure 3-15C.)
- d. Cover the triangle with a third turn, completing the anchor. (See Figure 3-15D.)



**Figure 3-15**

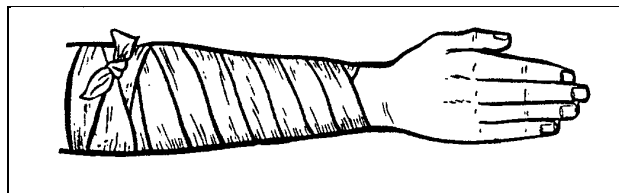
4. Apply the bandage wrap to the injury.

- a. Use a circular wrap to end other bandage patterns, such as a pressure bandage, or to cover small dressings. (See Figure 3-16.)



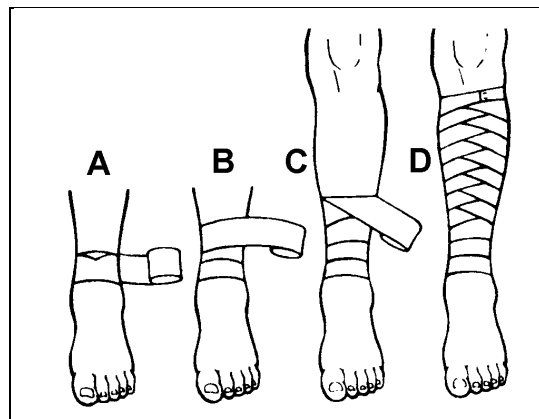
**Figure 3-16**

- b. Use a spiral wrap for a large cylindrical area such as a forearm, upper arm, calf, or thigh. The spiral wrap is used to cover an area larger than a circular wrap can cover. (See Figure 3-17.)



**Figure 3-17**

- c. Use a spiral reverse wrap to cover small to large conical areas, for example, from ankle to knee. (See Figure 3-18.)



**Figure 3-18**

d. Use a figure eight wrap to support or limit joint movement at the hand, elbow, knee, ankle, or foot. (See Figure 3-19.)

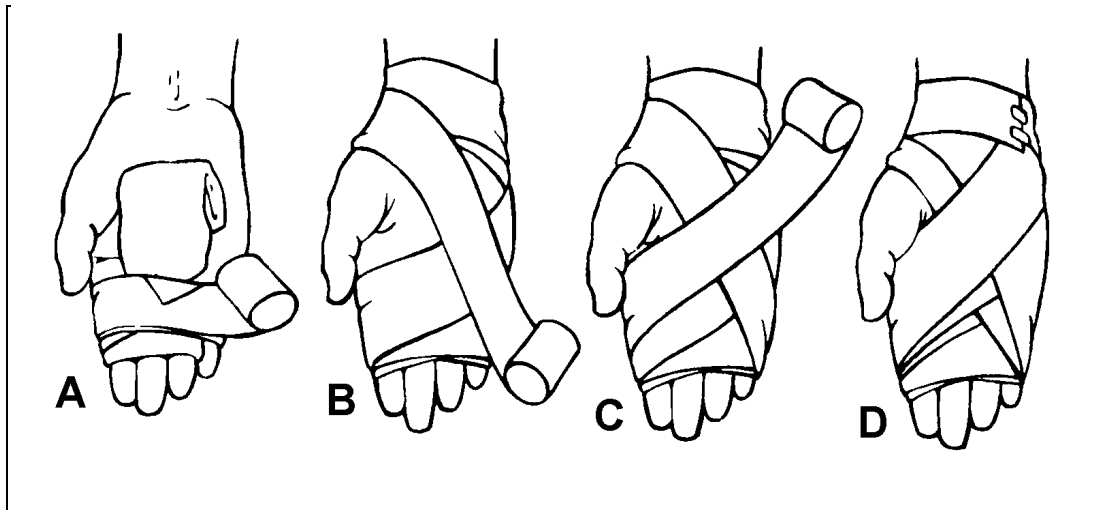


Figure 3-19

e. Use a spica wrap (same as the figure eight wrap) to cover a much larger area such as the hip or shoulder.

f. Use a recurrent wrap for anchoring a dressing on fingers, the head, or on a stump. (See Figure 3-20.)

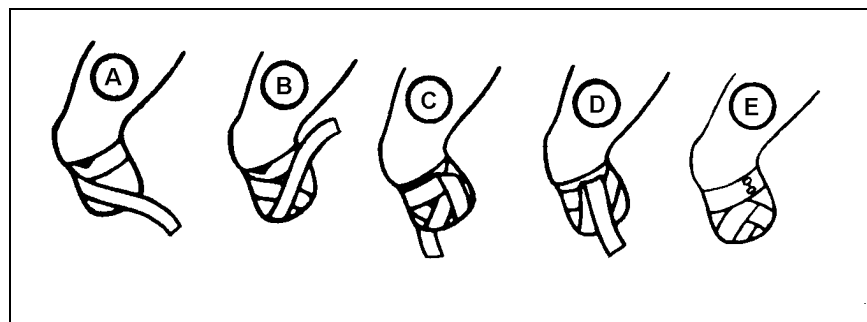


Figure 3-20

**NOTE:** Bandage width depends on the site: 1 inch wide for fingers, and 3, 4, or 6 inches wide for the stump or head.

5. Check the circulation after application of the bandage.
  - a. Check the pulse distal to the injury.
  - b. Blanch the fingernail or toenail, if applicable.
  - c. Inspect the skin below the bandaging for discoloration.
  - d. Ask the patient if any numbness, coldness, or tingling sensations are felt in the bandaged part.
  - e. Remove and reapply the bandage, if necessary.
6. Check for irritation.
  - a. Ask the casualty if the bandage rubs.
  - b. Check for bandage wrinkles near the skin surface.
  - c. Check for red skin or sores when the bandage is removed.
  - d. Remove and reapply the bandage, if necessary.
7. Elevate the injured extremities to reduce swelling (edema) and control bleeding, if appropriate.
8. Record the treatment given on the appropriate form.

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Select the appropriate bandage material.	P	F
2. Prepare the patient for bandaging.	P	F
3. Apply the anchor wrap.	P	F
4. Apply the bandage wrap.	P	F
5. Check circulation.	P	F
6. Check for irritation.	P	F
7. Elevate the injured extremity, if appropriate.	P	F
8. Record the treatment given.	P	F

**STP 8-91B15-SM-TG**

**Performance Measures**

9. Do not cause further injury to the casualty.

**Results**

P F

**REFERENCES:** None



081-833-0061

## APPLY ARM SLINGS

### CONDITIONS

Necessary materials and equipment: two cravats and one safety pin.

### STANDARDS

Apply the appropriate arm sling to the injury without causing additional injury to the casualty. Perform steps 1 through 7 in order.

### TRAINING/EVALUATION

#### *Training Information Outline*

1. Survey the casualty. (See task 081-833-0015.)
2. Identify the type of arm or shoulder injury.
3. Take the casualty's radial pulse.
4. Apply the arm sling.
  - a. Method one--for injuries to the arm that do not involve the shoulder.
    - (1) Place the triangular bandage between the chest and the injured arm.
    - (2) Extend the apex of the bandage beyond the elbow.
    - (3) Lay the upper end of the bandage over the shoulder on the injured side. (See Figure 3-21.)

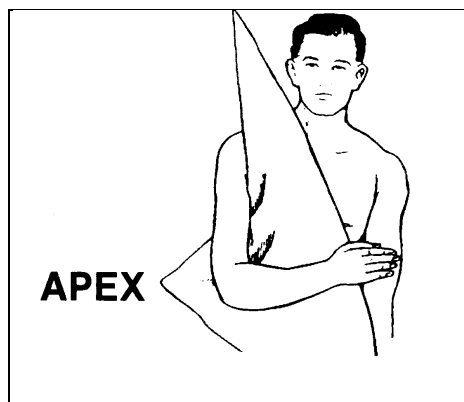
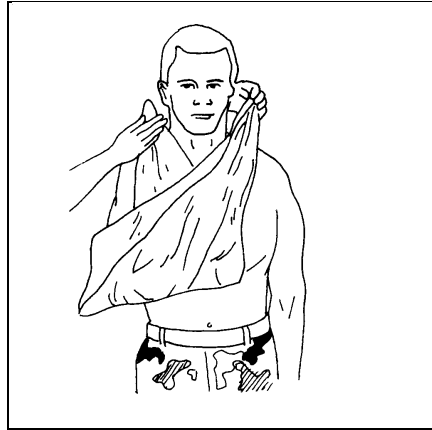


Figure 3-21

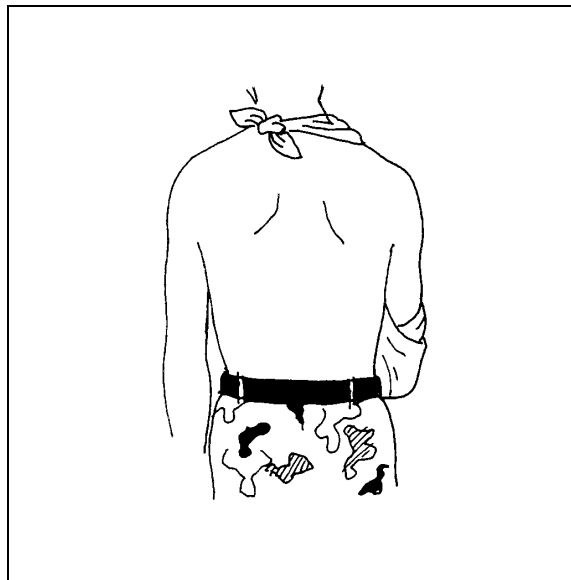
- (4) Fold the side opposite the apex back to the fingers, forming a cuff.
- (5) Bring the lower end of the bandage up over the forearm and over the shoulder on the uninjured side. (See Figure 3-22.)



**Figure 3-22**

*NOTE:* Position the hand slightly higher than the elbow.

- (6) Tie the knot at the hollow of the neck on the uninjured side. (See Figure 3-23.)



**Figure 3-23**

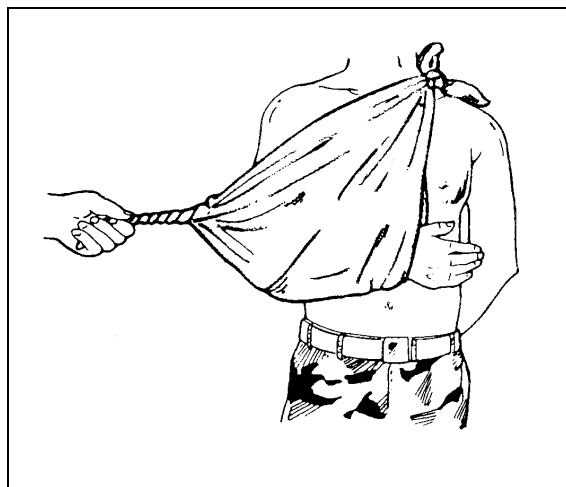
(7) Secure the apex.

(a) Safety pin method. Fold the apex forward over the elbow and pin it to the bandage. (See Figure 3-24.)



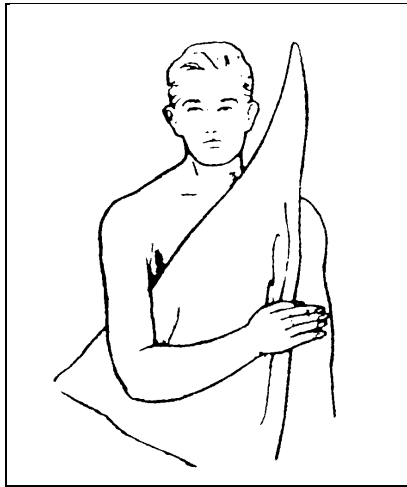
**Figure 3-24**

(b) Pigtailing method. Twist the apex and tuck the twisted end (pigtail) into the bandage at the elbow. (See Figure 3-25.)



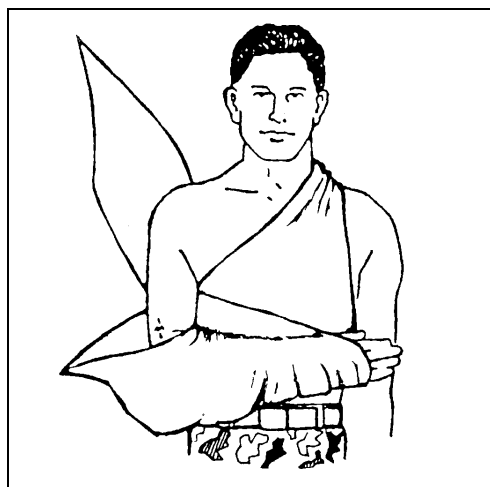
**Figure 3-25**

- b. Method 2--for injuries to the arm involving the shoulder, or shoulder injuries.
  - (1) Perform steps 4a(1) and 4a(2).
  - (2) Lay the upper end of the bandage over the uninjured shoulder. (See Figure 3-26.)



**Figure 3-26**

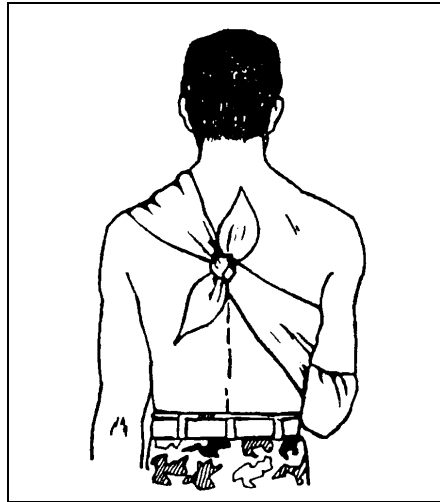
- (3) Fold the side opposite the apex back to the fingers, forming a cuff.
    - (4) Bring the lower end of the bandage up over the forearm and under the armpit on the injured side. (See Figure 3-27.)



**Figure 3-27**

*NOTE:* The hand should be positioned slightly higher than the elbow.

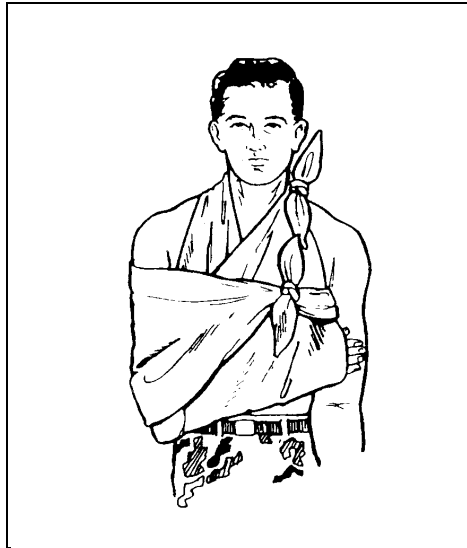
- (5) Tie the knot at the patient's back, between the shoulder blades. (See Figure 3-28.)



**Figure 3-28**

- (6) Secure the apex. (See step 4a(7)).
5. Check the radial pulse.
  6. Apply the swathe.
    - a. Fold a cravat to a 6 inch width.
    - b. Place the cravat flush with the elbow and bring one tail around the casualty's back and under the uninjured arm.
    - c. Bring the second tail across the chest and above the injured forearm.

- d. Tie the cravat above breast pocket level on the uninjured side. (See Figure 3-29.)



**Figure 3-29**

7. Check the radial pulse.
8. Record the treatment given on the appropriate forms.
9. Evacuate the casualty, if necessary.

***Evaluation Guide***

**Performance Measures**

**Results**

- |  |   |   |
|--|---|---|
| 1. Survey the casualty. (See task 081-833-0015.) | P | F |
| 2. Identify the type of arm or shoulder injury.  | P | F |
| 3. Take the casualty's radial pulse.             | P | F |
| 4. Apply the arm sling.                          | P | F |
| 5. Check the radial pulse.                       | P | F |
| 6. Apply the swathe.                             | P | F |
| 7. Check the radial pulse.                       | P | F |

**Performance Measures**

**Results**

- |   |   |   |
|---|---|---|
| 8. Record the treatment given on the appropriate forms. | P | F |
| 9. Evacuate the casualty, if necessary.                 | P | F |
| 10. Do steps 1 through 7 in order.                      | P | F |

**REFERENCES:** None

081-833-0062

## IMMOBILIZE A SUSPECTED FRACTURE OF THE ARM OR DISLOCATED SHOULDER

### CONDITIONS

Necessary materials and equipment: wire ladder splint, cravat bandages, basswood splint, and materials for improvising a splint.

### STANDARDS

Complete all the steps necessary to immobilize a suspected fracture of the arm or dislocated shoulder without causing additional injury.

### TRAINING/EVALUATION

#### *Training Information Outline*

1. Check the casualty's radial pulse. If no pulse is felt, bandage and/or splint the extremity and arrange for immediate evacuation.
2. Position the injury.
  - a. Position a fractured arm by having the casualty support it with the uninjured arm and hand in the least painful position, if possible.

#### **CAUTION**

Do not try to reduce or set the fracture. Splint it where it lies unless a severe deformity makes it necessary to reposition the limb to keep it within the confines of the litter and/or evacuation vehicle.

- b. Position the arm for shoulder dislocations.

#### **CAUTION**

Do not use force when moving the limb.

- (1) Posterior. Position the forearm across the midsection of the casualty's body with the hand or wrist slightly higher than the elbow.
    - (2) Anterior. Maintain the arm in a fixed, locked position away from the body.
    - (3) Turn the palm of the hand in toward the body, if possible.



3. Immobilize the injury.

- a. Use an arm sling to immobilize a dislocated shoulder.
- b. Use a basswood or an improvised splint for a fractured forearm.

- (1) Pad the splint.
- (2) Place the padded splint under the casualty's forearm so that it extends from the elbow to beyond the fingertips.
- (3) Place a rolled cravat or similar material in the palm of the cupped hand.
- (4) Apply the cravats in the following order and recheck the radial pulse after each cravat is applied.
  - (a) Above the fracture site near the elbow.
  - (b) Below the fracture site near the wrist.
  - (c) Over the hand and tied in an "X" around the splint.
- (5) Apply an arm sling and swathe. (See task 081-833-0061.)

*NOTE:* Ensure that the fingernails are left exposed so that a blanch test may be performed.

c. Use a wire ladder splint for a fractured humerus, and for multiple fractures of an arm or a forearm when the elbow is bent.

- (1) Prepare the splint using the uninjured arm for measurements.
  - (a) Bend the prong ends of the splint away from the smooth side, about 1 1/2 inches down on the outside of the splint.
  - (b) With the smooth side against the elbow, place one end of the splint even with the top of the uninjured shoulder.
  - (c) Select a point slightly below the elbow.
  - (d) Remove the splint from the arm and bend the splint at the measured point to form an "L."
  - (e) Pad the splint.

*NOTE:* If padding is unavailable, apply the splint anyway.

## STP 8-91B15-SM-TG

(2) Position the splint on the outside of the injured arm, extending from the shoulder to beyond the fingertips.

*NOTE:* Extend the "L" angle of the splint beyond but do not touch the elbow of the injured arm. Extend the leg of the angle touching the forearm beyond the ends of the fingers. If the splint is too short, extend it with a basswood splint.

*NOTE:* If possible, have the casualty support the splint.

(3) Place a rolled cravat or similar material in the palm of the cupped hand.

(4) Check the radial pulse. Make a note on the Field Medical Card if the pulse is absent or if the pulse was lost after treatment.

(5) Apply the cravats in the following order and recheck the radial pulse after each cravat is applied.

- (a) On the humerus above any fracture site.
- (b) On the humerus below any fracture site.
- (c) On the forearm above any fracture of the forearm.
- (d) On the forearm below any fracture site.
- (e) Around the hand and splint.

(6) Tie each cravat on the outside edge of the splint.

*NOTE:* If the pulse is weaker or absent after tying the cravat, loosen and retie the cravat.

(7) Apply an arm sling and swathe. (See task 081-833-0061.)

d. Use a wire ladder splint for a fractured or dislocated humerus, elbow, or forearm when the elbow is straight.

(1) Prepare the splint as in step 3c(1) but bend it only enough to fit the injured arm.

(2) Position the splint on the outside of the arm against the back of the hand.

(3) Apply the cravats in the following order and recheck the radial pulse after each cravat is applied.

- (a) Above the injury.

- (b) Below the injury.
  - (c) High on the humerus, above the first cravat.
  - (d) Around the hand and wrist.
- (4) Tie each cravat on the outside of the splint.

*NOTE:* If the pulse is weaker or absent after tying the cravat, loosen and retie the cravat.

- (5) Apply swathes.
- (a) Place the arm toward the midline in front of the body. Bind the forearm to the pelvic area with a cravat. Tie the knot on the uninjured side.
  - (b) Apply an additional cravat above the elbow. Secure it on the uninjured side at breast pocket level.
4. Record the treatment given on the Field Medical Card (FMC).
5. Evacuate the casualty.

#### *Evaluation Guide*

Performance Measures	Results	
1. Position the injury.	P	F
2. Check the radial pulse.	P	F
3. Immobilize the injury.	P	F
4. Record the treatment on the FMC.	P	F
5. Evacuate the casualty.	P	F
6. Do not cause further injury to the casualty.	P	F

**REFERENCES:** None

081-833-0064

## IMMOBILIZE A SUSPECTED DISLOCATED OR FRACTURED HIP

### CONDITIONS

You have a casualty with a suspected dislocated or fractured hip. Three other soldiers are available to assist you. Necessary materials and equipment: litter, splints, cravats or commercial straps, padding material, spine board or other rigid object, a traction splint, and medical anti-shock trousers (MAST).

### STANDARDS

Immobilize a suspected dislocated or fractured hip without impairing circulation or causing further injury to the casualty.

### TRAINING/EVALUATION

#### *Training Information Outline*

1. Check for the signs and symptoms of a hip injury.

#### **CAUTION**

Both a dislocated and a fractured hip are accompanied by considerable pain. The casualty will resist any movement because of pain. It is essential that medical personnel take all possible precautions, using the best available materials at hand while preparing the casualty to be immediately evacuated.

- a. Anterior dislocation (abduction).

*NOTE:* Anterior dislocation is very rare and is caused by the legs suddenly being forced widely apart.

- (1) Hip pain.
- (2) Severe deformity of the affected leg.
  - (a) The knee is turned outward.
  - (b) The affected leg is shortened.
  - (c) The hip is drawn away from the midline of the body.
  - (d) The leg has rotated away from the midline of the body.
- (3) Impaired circulation in the affected extremity.

- (a) Loss of pulse distal to the injury.
- (b) Coolness and/or cyanosis.
- (c) Swelling due to internal blood loss.
- (d) Hypovolemic shock.

**WARNING**

Significant blood loss may occur before swelling is evident. Take the casualty's vital signs as soon as possible and monitor them during stabilization and transport.

- (4) Impaired sensation in the affected extremity.
  - (a) Tingling or other abnormal sensations (paresthesia).
  - (b) Loss of sensation.

b. Posterior dislocation (abduction).

*NOTE:* Posterior dislocation is the most common type of hip dislocation.

- (1) Hip pain.
- (2) Severe deformity of the affected leg.
  - (a) The hip joint is flexed with the knee drawn up.
  - (b) The hip is drawn toward the midline of the body.
  - (c) The leg has rotated toward the midline of the body.
- (3) Impaired circulation in the affected extremity.
  - (a) Loss of pulse distal to the injury.
  - (b) Coolness and/or cyanosis.
  - (c) Swelling due to internal blood loss.

## STP 8-91B15-SM-TG

(4) Impaired sensation in the affected extremity.

(a) Paresthesia.

(b) Loss of sensation.

*NOTE:* Weakness of muscles that raise the foot may occur. This condition, known as "foot drop," may be a sign of damage to the sciatic nerve.

c. Fracture.

*NOTE:* Some of the most common fractures are those that occur at the upper end of the femur. These have been called "hip fractures" even though the hip joint is rarely involved.

(1) Hip pain.

(2) The casualty is unable to walk on or move the affected leg.

(3) Deformity.

(a) The affected leg has rotated toward the midline of the body.

(b) The affected leg will usually be shorter than the uninjured one.

*NOTE:* Fractures of the femur are often open. Whether closed or open, they are always associated with a loss of large amounts of blood.

(4) Impaired circulation in the affected extremity.

(a) Loss of pulse in the femoral or popliteal arteries distal to the injury.

(b) Coolness and/or cyanosis.

(c) Swelling due to internal blood loss.

(5) Impaired sensation in the affected extremity.

(a) Paresthesia.

(b) Loss of sensation.

2. Check for circulation in the affected leg by checking the femoral and popliteal pulses and observing for swelling or cyanosis.

3. Check for impaired sensation by asking the casualty if he or she has tingling, abnormal sensations, or loss of sensation in the affected limb.

4. Immobilize the injury.

a. Hip dislocations.

(1) Place the casualty on a firm surface, such as a spine board, using the log roll technique.

(a) Place the spine board beside the casualty, parallel with the body.

(b) Kneel at the casualty's head, place hands on each side of the head and jaw, and pull back slightly to immobilize the head and neck.

(c) Instruct the assistants to kneel on the uninjured side of the casualty--one at the casualty's shoulder and waist, one at the hip and thigh, and one at the knee and ankle.

(d) Instruct the assistants to place their hands on the opposite side of the casualty.

1. If the casualty is lying face up, direct the assistants to roll the casualty in unison slightly toward them while turning the casualty's head to keep it aligned with the spine.

2. If the casualty is face down, direct the assistants to roll the casualty toward them, using the above technique, to position the casualty face up.

**CAUTION**

Do not roll the casualty onto the injured side.

(e) Tell the assistant at the casualty's shoulder and waist to reach across the casualty with one hand, grasp the board at the near edge, and slide it against the casualty.

(f) Tell the assistant closest to the casualty's feet to reach across the far edge of the board and hold it in place.

(g) Instruct the assistants to slowly roll the casualty back onto the board, keeping the head and spine in a straight line.

(2) Support the leg in its abnormal position using pillows, blankets, or similar material.

(3) Secure the support material with cravats.

## STP 8-91B15-SM-TG

b. Hip fracture.

- (1) Place the casualty (using the technique described in step 4a(1) on a firm surface.
- (2) Place support material under the buttocks to reduce abdominal pain only if there are no other major fractures in the lower extremities.
- (3) Place bulky support material between the casualty's legs and strap them together.
- (4) Bring the casualty's knees up.
- (5) Place bulky support material underneath the knees.

5. Check for complications.

- a. Impaired circulation in the affected limb.
- b. Neurological deficit.
- c. Hypovolemic shock.

6. Record the treatment given.

**WARNING**

Spontaneous reduction of dislocation may occur during any movement. This may be accompanied by additional damage to nerves and blood vessels. The receiving facility must be informed if this occurs.

7. Evacuate the casualty.

- a. Position the casualty and spine board on a litter.
- b. Position the casualty resting slightly on the uninjured side.
- c. Support the injured side with padding material.
- d. Secure the casualty and spine board to the litter.



**WARNING**

Avoid any bumping or jerking during transport. Excessive movement of a fracture or dislocation can increase blood loss and pain. Hip and leg injuries allow for a greater area of pooling of blood that is not evident early on, and may result in the casualty going in to hypovolemic shock.

*Evaluation Guide***Performance Measures****Results**

- |  |   |   |
|--|---|---|
| 1. Check for the signs and symptoms of a hip injury. | P | F |
| 2. Check for circulation in the affected leg.        | P | F |
| 3. Check for impaired sensation.                     | P | F |
| 4. Immobilize the injury.                            | P | F |
| 5. Check for complications.                          | P | F |
| 6. Record the treatment given.                       | P | F |
| 7. Evacuate the casualty.                            | P | F |
| 8. Do not cause further injury to the casualty.      | P | F |

**REFERENCES:** None

**081-833-0091**

**IMMOBILIZE A SUSPECTED FRACTURED FEMUR USING THE HARE TRACTION SPLINT**

**CONDITIONS**

Other more serious injuries have been treated. An assistant is available. Necessary materials and equipment: Hare traction splint and padding.

**STANDARDS**

Apply the splint without restricting circulation. Immobilize the fracture and maintain traction throughout the procedure, minimizing the effect of the injury.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Prepare the leg and splint.
  - a. First Medic: Survey the casualty. Direct the Second Medic to stabilize the casualty's injured leg at the ankle and to check for and report the presence or absence of a distal pulse.
  - b. First Medic: Cut open the casualty's trouser leg to expose the injury site, and then prepare the splint.
    - (1) Remove the cover and place the tri-ring ankle strap beside the heel of the injured leg.
    - (2) Place the splint parallel to the casualty's uninjured leg.
    - (3) Position the ischial ring at the buttock and twist the collet sleeve to unlock.
    - (4) Extend the splint 8 to 12 inches beyond the foot and twist the collet sleeve to lock.
    - (5) Open and position the four Velcro leg support straps.
      - (a) One above the fracture site.
      - (b) One below the fracture site, but above the knee.
      - (c) One below the knee.
      - (d) One above the ankle.
    - (6) Unfasten all leg support straps and leave them open.

(7) Unfasten the ischial strap and lay it aside.

(8) Release the ratchet, pull the traction strap over the top of the ratchet, and place the "S" hook so that it hangs off the splint.

(9) Position the splint between the Second Medic's legs, so that the splint will be in alignment with the casualty's injured leg.

(10) Position self at the casualty's injured leg, stabilizing the leg at the tibial area.

2. Apply the ankle hitch.

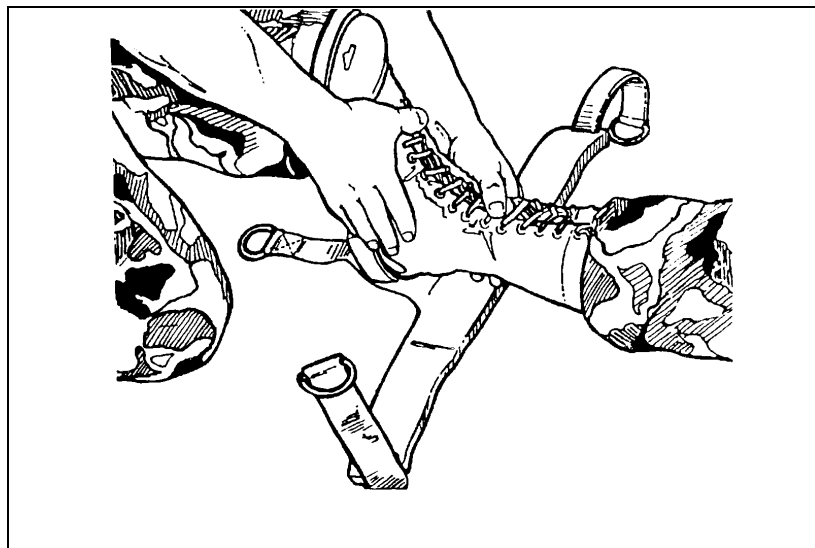
a. First Medic: Manually support and stabilize the injured limb to prevent any movement at the fracture site.

b. Second Medic: Apply the ankle hitch.

(1) Thread the ankle hitch under the casualty's ankle at the void created by the casualty's heel.

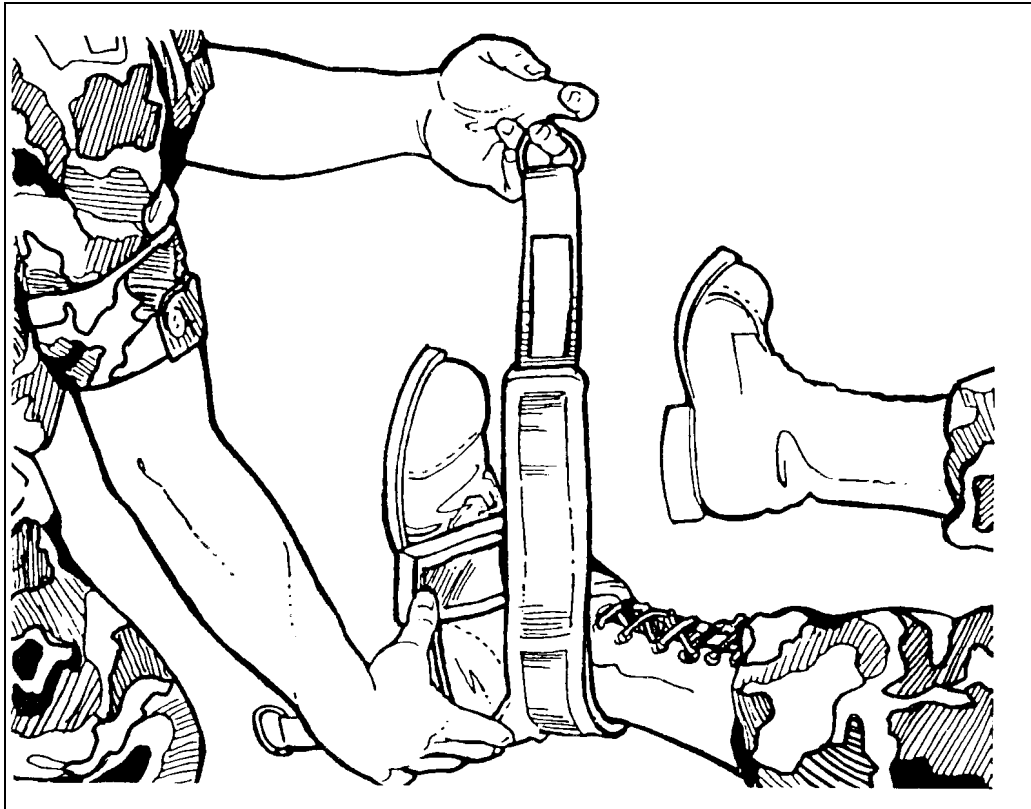
(2) Place the lower edge of the ankle hitch even with the bottom edge of the heel. (See Figure 3-30.)

*NOTE:* If needed, push lightly on the ball of the foot to even the hitch with the heel but do not lift the foot off the ground.



**Figure 3-30**

- c. Crisscross the side straps high on the instep. (See Figure 3-31.)



**Figure 3-31**

- d. Bring the crisscrossed straps down to meet the center strap and hold them in place.
- e. Grasp the casualty's foot and place one hand on top of the foot and the other hand under the casualty's ankle.

3. Apply manual traction.

a. First Medic: Move hands from the tibial area to under the fracture site (one hand above and one hand below the fracture site) to be ready to support the fracture site as the traction is pulled and the leg is lifted.

b. Second Medic: Simultaneously apply gentle, longitudinal, manual traction to the ankle hitch and foot, and lift the casualty's leg enough to fit the splint into place. (See Figure 3-32.)

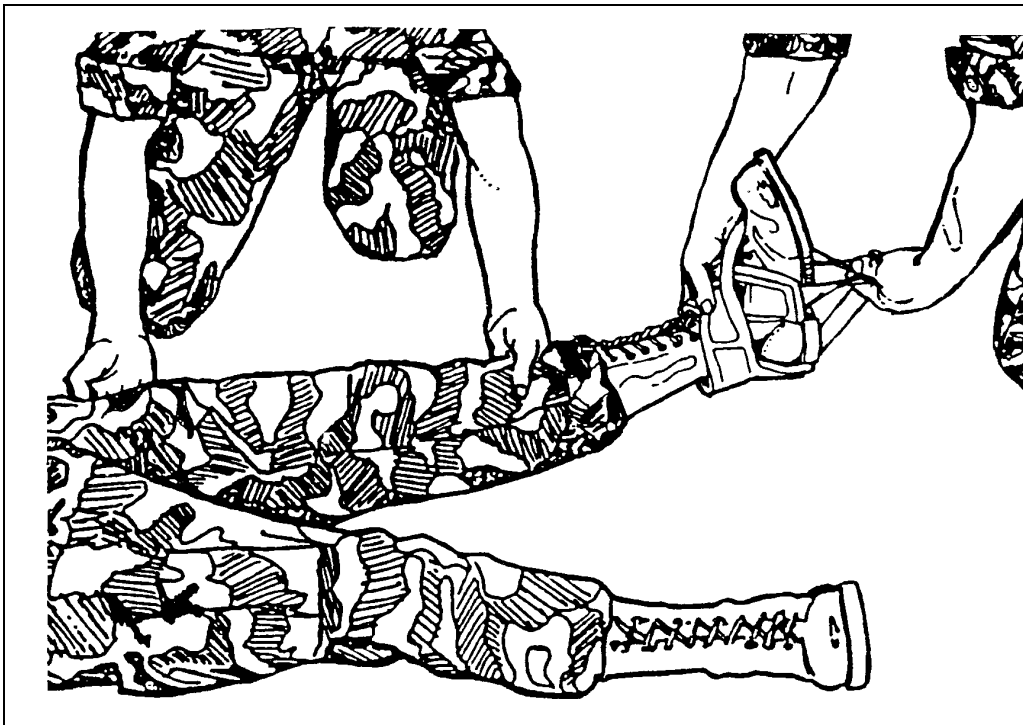


Figure 3-32

**CAUTION**

Apply only enough traction to align the limb to fit into the splint. Do not align the fracture fragments anatomically. Once manual traction has been applied, it must remain until the traction splint is in place, providing the traction.

4. Position the splint and apply traction.

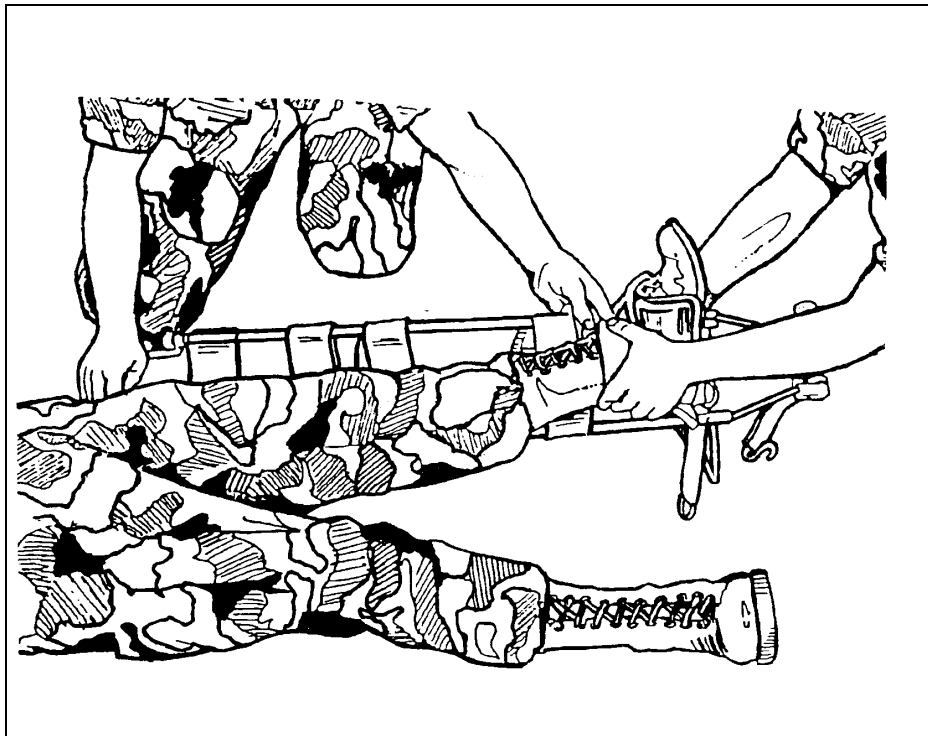
a. First Medic: Position the splint.

(1) When the leg is raised, move one hand from the fracture site and pull the splint from between the Second Medic's legs.

(2) Slide the splint under the leg until the ischial ring is at the buttock. (See Figure 3-33.)

*NOTE:* Make sure the splint is aligned with the leg.

(3) When the splint is in place, position the hand back under the fracture site for stabilization only.

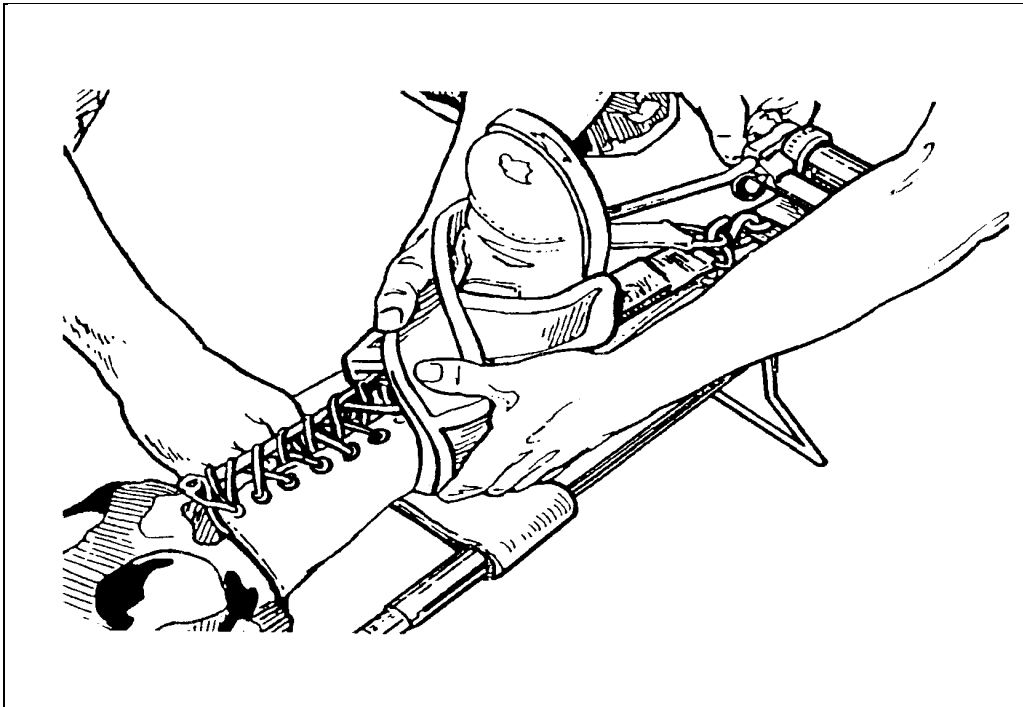


**Figure 3-33**

b. On the Second Medic's signal, the leg is lowered into the cradle of the splint.

c. Second Medic: Maintain manual traction.

- d. First Medic: Apply traction.
  - (1) Pad the groin area and fasten the ischial strap at the groin.
  - (2) Twist the strap at the heel until it is even with the two side straps.
  - (3) Insert the "S" hook into the three rings, heel ring first.
  - (4) Twist the traction handle to apply traction. (See Figure 3-34)



**Figure 3-34**

- e. Second Medic: Tell the First Medic when traction is equalized.
5. Fasten the leg support straps.
  - a. Second Medic: Release manual traction but continue to support the leg at the ankle until all straps are in place.
  - b. First Medic: Fasten the leg support straps so that the limb is securely held in the splint. Check the popliteal pulse after each strap is fastened.

*NOTE:* Do not place a strap over the fracture site.

## STP 8-91B15-SM-TG

6. First Medic: Check the casualty's condition.
  - a. Perform a neurovascular check on the splinted leg.
  - b. Take the casualty's vital signs and assess for shock.
  - c. Record the results on the Field Medical Card (FMC).
7. Secure the splinted leg to the unaffected leg and to the litter.

*NOTE:* If necessary, elevate the splinted leg so that the foot is clear of the ground.

8. Evacuate the casualty to the nearest medical treatment facility as soon as possible.

### *Evaluation Preparation*

*Setup:* For training and evaluation, have one soldier act as the casualty and have another soldier act as the assistant. Designate the assistant as the Second Medic, and tell him or her to follow the instructions of the soldier being tested, the First Medic.

*Brief soldier:* Tell the soldier that he or she is the First Medic and must direct the assistant. Tell the soldier to apply the Hare traction splint.

### *Evaluation Guide*

Performance Measures	Results	
1. Prepare the leg and splint.	P	F
2. Apply the ankle hitch.	P	F
3. Apply manual traction.	P	F
4. Position the splint and apply traction.	P	F
5. Fasten the leg support straps.	P	F
6. Check the casualty's condition.	P	F
a. Perform a neurovascular check on the splinted leg.		
b. Take vital signs and assess for shock.		
c. Record the results on the FMC.		



**Performance Measures**

**Results**

- |   |   |   |
|---|---|---|
| 7. Secure the splinted leg.                     | P | F |
| 8. Evacuate the casualty.                       | P | F |
| 9. Do not cause further injury to the casualty. | P | F |

**REFERENCES:** None

081-833-0092

## TRANSPORT A CASUALTY WITH A SUSPECTED SPINAL INJURY

### CONDITIONS

All other more serious injuries or conditions have been treated. Three or four soldiers are available for assistance. Necessary materials and equipment: straps, cravats, towels, long and short spine boards, safety pins, and materials to improvise a cervical collar and head supports.

### STANDARDS

Complete all the steps necessary to immobilize and transport a casualty with a suspected spine injury without causing additional injury to the casualty.

### TRAINING/EVALUATION

#### *Training Information Outline*

1. Check for the signs and symptoms of a spinal injury.

#### **WARNING**

If you suspect that the casualty has a spinal injury, treat him or her as though he or she does have a spinal injury.

- a. Spinal deformity. Its presence indicates a severe spinal injury, but its absence does not rule one out.
- b. Tenderness and/or pain in the spinal region.
  - (1) Detect it by palpation, or ask the casualty.
  - (2) The presence of any pain is sufficient cause to suspect the presence of a spinal injury.
- c. Lacerations and/or contusions in the spinal region indicate severe trauma, and usually accompany a spinal injury.

**NOTE:** The absence of lacerations and/or contusions does not rule out a spinal injury.

- d. Weakness, loss of sensation, and/or paralysis.
  - (1) A neck level (cervical) spine injury may cause numbness or paralysis in all four extremities.
  - (2) A waist level spinal injury may cause numbness or paralysis below the waist.

(3) Ask the casualty to try to move the fingers and toes to check for paralysis.

e. Palpate the spine for pain.

(1) Carefully insert the hand under the neck and feel along the cervical spine as far as can be done without disturbing the casualty's spine.

(2) Carefully insert the hand into the cavity formed by the small of the back and feel along the thoracic spine and down the lumbar spine as far as possible without disturbing the spine.

(3) If the casualty says that an area of the spine is tender, consider that he or she has a spinal injury.

2. Secure the casualty to a short spine board.

*NOTE:* Apply a short spine board when extricating a casualty from a vehicle or location that will not accommodate the use of a long spine board. If available use a KED which is a commercial spine board.

a. Direct an assistant to immobilize the casualty's head and neck using manual stabilization.

(1) Place the hands on both sides of the casualty's skull, with the palms over the ears.

(2) Support the jaw (mandible) with the fingers.

(3) Maintain manual stabilization until directed to release the stabilization.

b. Apply a cervical collar, if available, or improvise one.

(1) Use a folded towel, T-shirt, field jacket, or similar material.

(2) Slide one end of the folded material under the casualty's neck.

(3) Wrap the material around the neck, being careful not to move the head or neck.

(4) Fasten the material in place with tape, pins, or a cravat.

(5) Check the collar for tightness.

c. Push the board as far into the area behind the casualty as possible.

d. Tilt the upper end of the board toward the head.

e. Direct the assistant to position the back of the casualty's head against the board, maintaining manual stabilization, by moving the head and neck as one unit.

## STP 8-91B15-SM-TG

*NOTE:* If the cervical collar or improvised collar does not fit flush with the spine board, place a roll in the hollow space between the neck and board. The roll should only be large enough to fill the gap, not to exert pressure on the neck.

- f. Secure the casualty's head and head supports to the board with straps or cravats.

### WARNING

Ensure that the cravats or head straps are firmly in place before the assistant releases stabilization.

- (1) Apply head supports.
- (2) Use two rolled towels, blankets, sandbags, or similar material.
- (3) Place one close to each side of the head.
- (4) Using a cravat-like material across the forehead, make the supports and head one unit by tying to the board.

- g. Secure the casualty to the short spine board.

- (1) Place the buckle of the first strap in the casualty's lap.
- (2) Pass the other end of the strap through the lower hole in the board, up the back of the board, through the top hole, under the armpit, over the shoulder, and across the back of the board at the neck.
- (3) Buckle the second strap to the first strap and place the buckle on the side of the board at the neck.
- (4) Pass the other end over the shoulder, under the armpit, through the top hole in the board, down the back of the board, through the lower hole, and across the lap. Secure it by buckling it to the first strap.

- h. Tie the casualty's hands together and place them in his or her lap.

*NOTE:* When positioning a casualty, who is secured to a short spine board, on a long spine board, line up the hand grip holes of the short spine board with the holes of the long spine board, if possible, and secure the two boards together.

3. Place the casualty on a long spine board.

*NOTE:* If a spine board is not available, use a standard litter or improvised litter made from a board or door. A hard surface is preferable to one that gives with the casualty's weight.

a. The log roll technique.

- (1) Place the spine board next to, and parallel with, the casualty.
- (2) Immobilize the casualty's head and neck using manual stabilization.
  - (a) Place your hands on both sides of the casualty's skull, with the palms over the ears.
  - (b) Support the jaw (mandible) with the fingers.
  - (c) Maintain manual stabilization until the casualty has been placed on the spine board.
- (3) Apply a cervical collar, if available, or improvise one. (See steps 2b(1) through 2b(5).
- (4) Brief each of the three assistants on their duties and instruct them to kneel on the same side of the casualty, with the spine board on the opposite side of the casualty.
  - (a) First assistant. Place the near hand on the shoulder and the far hand on the waist.
  - (b) Second assistant. Place the near hand on the hip and the far hand on the thigh.
  - (c) Third assistant. Place the near hand on the knee and the far hand on the ankle.
- (5) On your command, and in unison, the assistants roll the casualty slightly toward them. Turn the casualty's head slightly, keeping it in a straight line with the spine.
- (6) Instruct the assistants to reach across the casualty with one hand, grasp the spine board at its closest edge, and slide it against the casualty. Instruct the number two assistant to reach across the board to the far edge and hold it in place to prevent board movement.
- (7) Instruct the assistants to slowly roll the casualty back onto the board. Keep the head and spine in a straight line.
- (8) Place the casualty's wrists together at the waist and tie them together loosely.

*NOTE:* If the cervical collar or improvised collar does not fit flush with the spine board, place a roll in the hollow space between the neck and board. The roll should only be large enough to fill the gap, not to exert pressure on the neck.

b. The straddle-slide technique.

*NOTE:* Use this method when limited space makes it impossible to use the log roll technique.

- (1) Stand at the head of the casualty with your feet wide apart.

## STP 8-91B15-SM-TG

(2) Apply stabilization to the casualty's head and apply a cervical collar. (See steps 3a(2) through 3a(3).)

(3) Instruct the first assistant to stand behind you (facing your back), to line up the spine board, and to gently push the spine board under the casualty at your command.

(4) Instruct the second assistant to straddle the casualty while facing you and to gently elevate the shoulders so that the spine board can be slid under them.

(5) Instruct the third assistant (facing you) to carefully elevate the hips while the spine board is being slid under the casualty.

(6) Instruct the fourth assistant (facing you) to carefully elevate the legs and ankles while the board is being slid into place under the casualty.

### WARNING

Complete all movements simultaneously, keeping the head and spine in a straight line.

*NOTE:* If the cervical collar or improvised collar does not fit flush with the spine board, place a roll in the hollow space between the neck and board. The roll should only be large enough to fill the gap, not to exert pressure on the neck.

4. Secure the casualty to the long spine board.

a. Secure the casualty's head and head supports to the board with straps or cravats.

### WARNING

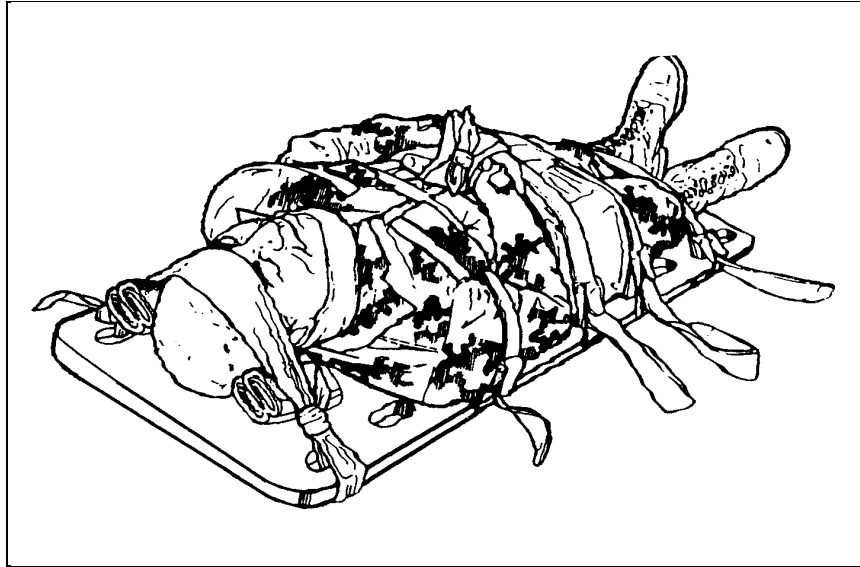
Do not release manual stabilization until the cravats or head straps are firmly in place.

(1) Apply head supports.

(2) Use two rolled towels, blankets, sandbags, or similar material.

(3) Place one close to each side of the head.

(4) Using a cravat-like material across the forehead, make the supports and head one unit by tying to the board. (See Figure 3-35.)



**Figure 3-35**

- b. Secure the casualty with straps across the chest, hips, thighs, and lower legs.

*NOTE:* Include the arms if the straps are long enough. If the spine board is not provided with straps and fasteners, use cravats or other long strips of cloth.

### **WARNING**

Securely immobilize the casualty's head and neck. Fill socks with sand and place them on both sides of the head and neck to keep it from moving.

5. Record the treatment on the Field Medical Card.
6. Evacuate the casualty.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, have another soldier act as the casualty. You will need three or four soldiers to act as the assistants. The soldier being tested is to act as the team leader and direct the actions of the assistants.

The casualty may be placed in a vehicle or other scenario, depending on available resources and the technique you are testing. Tell the casualty not to assist the soldiers in any way.

## STP 8-91B15-SM-TG

*Brief soldier:* To test step 1, tell the soldier to state the signs and symptoms of a spinal injury. Tell the soldier that the casualty has a suspected spinal injury. Then tell the soldier to position the casualty on a spine board and to direct the actions of the assistants.

### *Evaluation Guide*

#### **Performance Measures**

#### **Results**

- |   |   |   |
|---|---|---|
| 1. Check for signs and symptoms of a spinal injury. | P | F |
| 2. Secure the casualty on the short spine board.    | P | F |
| 3. Place the casualty on the long spine board.      | P | F |
| 4. Secure the casualty on the long spine board.     | P | F |
| 5. Record the treatment on the Field Medical Card.  | P | F |
| 6. Evacuate the casualty.                           | P | F |
| 7. Do not cause further injury to the casualty.     | P | F |

**REFERENCES:** None



081-833-0072

**TREAT A CASUALTY FOR INSECT BITES OR STINGS****CONDITIONS**

Necessary materials and equipment: constricting bands, antiseptic cleanser, tourniquet, tweezers, pin or needle, calamine lotion, sphygmomanometer, stethoscope, thermometer, and ice packs.

**STANDARDS**

Treat a casualty, minimizing the effect of insect bites or stings without causing further injury.

**TRAINING/EVALUATION***Training Information Outline*

1. Remove the casualty's clothing, shoes, or jewelry to expose the sting or bite area.

*NOTE:* Remove rings, watches, and other constricting items that are in the area of the bite or sting to prevent circulatory impairment in the event swelling of an extremity occurs.

2. Ask the casualty to identify, if possible, what bit or stung him or her.
3. Check the casualty for the signs and symptoms of insect bites and stings.
  - a. Black widow spider.

*NOTE:* There are five species of widow spiders. Most are a glossy black with a red or orange hourglass shape on the underside of the abdomen. The brown widow may be either gray or light brown with a red or orange hourglass marking. The red widow has brilliant red spots or a yellow marking on its back.

- (1) An immediate pin-prick sensation from the bite.
- (2) A dull, numbing pain at the bite site.
- (3) Two red puncture marks.
- (4) Severely painful muscular or abdominal spasms.
  - (a) Begin in 10 to 40 minutes.
  - (b) Peak in one to three hours.
  - (c) Persist for 12 to 48 hours.

## STP 8-91B15-SM-TG

- (5) Rigid, board-like abdomen.
- (6) Tightness in the chest and painful breathing.
- (7) Dizziness.
- (8) Nausea.
- (9) Vomiting.
- (10) Sweating.
- (11) Skin rash.

### b. Brown recluse spider.

*NOTE:* The brown recluse spider is medium sized, yellowish to medium dark brown, and covered with fine short hairs. It has a distinct groove between its chest and abdominal body parts, and a violin shaped mark on its back.

- (1) Mild to severe pain within hours.
- (2) The area becomes red, swollen, and tender.
- (3) The area develops a pale, mottled, cyanotic center.
- (4) A small blister may form.
- (5) A large scab of dead skin, fat, and debris forms (over several days).

### c. Scorpion.

*NOTE:* There are two general types of scorpions. The Arizona (black) scorpion is the only deadly type in the United States.

- (1) Harmless species.
  - (a) Severe pain and burning sensation at the sting site.
  - (b) Local swelling and discoloration.
  - (c) The symptoms last for 24 to 72 hours.
- (2) Deadly species.

- (a) "Pins and needles" sensation at the sting site.
- (b) No swelling at the sting site.
- (c) Excessive salivation.
- (d) Severe muscle contractions.
- (e) Hypertension.
- (f) Convulsions.
- (g) Circulatory collapse.
- (h) Cardiac failure.

d. Bee, wasp, hornet, and yellow jacket.

*NOTE:* A wasp or yellow jacket (slender body with elongated abdomen) retains its stinger and can sting repeatedly. A honey bee (rounded abdomen) usually leaves its stinger in the casualty.

- (1) Mild reaction.
  - (a) Pain at the sting site.
  - (b) A wheal, redness, and swelling.
  - (c) Itching.
  - (d) Anxiety.
- (2) Severe reaction.
  - (a) Generalized itching and burning.
  - (b) Urticaria (hives).
  - (c) Chest tightness and cough.
  - (d) Swelling around the lips and tongue.
  - (e) Bronchospasm and wheezing.
  - (f) Dyspnea.

## STP 8-91B15-SM-TG

- (g) Abdominal cramps.
- (h) Anxiety.
- (i) Respiratory failure.
- (j) Anaphylactic shock.

e. Fire ant.

*NOTE:* Fire ants inject a very irritating toxin into the skin. They bite repeatedly and in a very short period of time.

- (1) Burning sensation.
- (2) Wheal within minutes.
- (3) Clear, fluid-filled bubble or blister within minutes.
- (4) Cloudy, fluid-filled bubble within two to four hours.
- (5) Bubble on red base within 8 to 10 hours.
- (6) Ulceration (with scarring after healing).
- (7) Anaphylactic shock.

f. Tick.

*NOTE:* Hard ticks can transmit Rocky Mountain Spotted Fever and Lyme's disease, and may even cause anemia if the infestation is severe enough.

- (1) Itching and redness at the site.
- (2) Headache.
- (3) Moderate to high fever, which may last two to three weeks.
- (4) Pain in the joints or legs.
- (5) Swollen lymph nodes in the bitten area.
- (6) Paralysis and other central nervous system disorders are possible after several days.

*NOTE:* Generally, a tick must remain attached to the body for four to six hours in order to transmit infections. Early detection and proper removal may prevent transmission.

- g. Unknown, nonspecific insects.
  - (1) Pain and swelling at the site.
  - (2) Breathing difficulty.
  - (3) Shock.
- 4. Treat the bite or sting.
  - a. Black widow spider.
    - (1) Keep the casualty quiet and calm.
    - (2) Apply constricting band(s).
      - (a) Place a band above and below the site, one to two fingerwidths from the site.
      - (b) Use a single band above the ankle or wrist if the site is on a foot or hand.
      - (c) Tighten the bands enough to stop superficial venous circulation but not enough to interfere with the distal pulse.
      - (d) Advance the bands, as necessary, to remain at the edge(s) of the swelling.
    - (3) Cleanse the bite site using antiseptic.
    - (4) Apply ice or an ice pack to the site.
    - (5) Treat the casualty for anaphylactic shock, if necessary.
  - b. Brown recluse spider.
    - (1) Keep the casualty quiet and calm.
    - (2) Cleanse the bite site using antiseptic.
    - (3) Monitor the vital signs.
    - (4) Treat the casualty for anaphylactic shock, if necessary.

## STP 8-91B15-SM-TG

c. Scorpion.

- (1) Keep the casualty quiet and calm.
- (2) Apply ice or an ice pack to the site.
- (3) Maintain the airway and monitor the vital signs.
- (4) Treat the casualty for anaphylactic shock, if necessary.

*NOTE:* Antivenom should be administered by qualified medical personnel if the casualty is exhibiting systemic intoxication.

d. Bee, wasp, hornet, and yellow jacket.

- (1) Scrape the stinger from the site, if still in place.

<p style="text-align: center;"><b>CAUTION</b></p>
---

<p>Do not squeeze the stinger or attempt to pull it out. More venom will be injected into the casualty.</p>
---

- (2) Cleanse the site with soap and water.
- (3) Apply ice, an ice pack, or 10% ammonia solution to the site.
- (4) Treat the casualty for anaphylactic shock, if necessary.

e. Fire ant.

- (1) Cleanse the bite site using antiseptic.
- (2) Apply ice, an ice pack, or a cold compress to the site.
- (3) Treat the casualty for anaphylactic shock, if necessary.

f. Tick.

- (1) Remove all parts of the tick. Leave nothing imbedded in the skin.

*NOTE:* Debride the area if the tick's head remains in the skin.

(a) Using tweezers, grasp the tick as close to the skin as possible. Using steady pressure, pull the tick straight out.

(b) If tweezers are not available, use an absorbent material (gauze, toweling) to protect your skin. Grasp the tick as close to the skin as possible and pull straight out using steady pressure.

(2) If the tick breaks, thoroughly clean your hands with antiseptic.

(3) Cleanse the bite site using antiseptic.

*NOTE:* Ticks harbor pathogenic bacteria in their bodies. Adequate removal and cleansing is essential to prevent infection.

g. Unknown, nonspecific insect.

(1) Cleanse the site using antiseptic.

(2) Apply ice, an ice pack, or a cold compress to the site.

(3) Monitor the vital signs.

(4) Treat the casualty for anaphylactic shock, if necessary.

5. Record the treatment on the appropriate form.

6. Evacuate the casualty, if necessary.

*NOTE:* It is necessary to evacuate any casualty who shows signs of respiratory distress, shock, anaphylaxis, or who does not respond to initial treatment.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, have another soldier act as the casualty. Indicate the area of the bite or sting. To test step 3, coach the casualty on how to answer the soldier's questions regarding signs and symptoms such as pain. Tell the soldier what signs and symptoms, such as respiratory distress or shock, the casualty is exhibiting.

*Brief soldier:* Tell the soldier to treat the casualty for an insect bite or sting.

### ***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Expose the bite or sting site.	P	F
2. Ask the casualty what bit or stung him or her.	P	F
3. Check for the signs and symptoms of the insect bite or sting.	P	F

## **STP 8-91B15-SM-TG**

### **Performance Measures**

4. Treat the bite or sting.
5. Record the treatment on the appropriate form.
6. Evacuate the casualty, if necessary.

### **Results**

P	F
P	F
P	F

**REFERENCES:** None



081-833-0073

## TREAT A CASUALTY FOR SNAKEBITE

### CONDITIONS

Necessary materials and equipment: two constricting bands, antiseptic cleaning solution, iodine, water, soap, and ice packs.

### STANDARDS

Determine the type of snakebite and provide treatment, minimizing the effects of the snakebite, without causing further injury to the casualty.

### TRAINING/EVALUATION

#### *Training Information Outline*

1. Expose the injury site.
2. Determine the type of snakebite.

#### CAUTION

If the bite cannot be positively identified as nonpoisonous, the bite should be treated as a poisonous bite.

- a. Nonpoisonous.
  - (1) Four to six rows of teeth.
  - (2) No fangs.
- b. Poisonous.
  - (1) Two rows of teeth.
  - (2) Two fangs which create puncture wounds.

**NOTE:** Coral snakes are neurotoxic and leave only one or more tiny scratch marks in the area of the bite.

**NOTE:** If the snake can be killed without risk of another bite, it should be brought to the MTF for identification.

## STP 8-91B15-SM-TG

3. Check the casualty for signs and symptoms of a poisonous bite.

*NOTE:* The casualty may exhibit any or all of the symptoms. Symptoms may develop in one to eight hours.

- a. Pain and progressive swelling at the bite site.
- b. Drowsiness.
- c. General skin discoloration.
- d. Blurred vision.
- e. Difficulty hearing.
- f. Fever, chills, or sweating.
- g. Nausea and vomiting.
- h. Shock.
- i. Difficulty breathing.
- j. Paralysis.
- k. Convulsions.
- l. Coma.

### CAUTION

Antivenom is indicated in patients who, within 30 to 60 minutes following the bite, show progressive swelling involving the injured area, complain of paresthesia of the mouth, scalp, fingertips or toes, or who have any signs or symptoms of poisoning.

4. Initiate treatment.

### CAUTION

Do not give the casualty any sedatives, alcohol, food, or tobacco.

a. Nonpoisonous bite.

(1) Clean and disinfect the wound.

(a) Use soap and water or antiseptic solution.

(b) Apply iodine (betadine) if the casualty is not allergic to it.

(2) If the casualty has a current tetanus toxoid series, return the casualty to duty.

(3) If the casualty does not have a current tetanus toxoid series or does not know, refer the casualty to a medical treatment facility for an immunization.

b. Poisonous bites.

(1) Immobilize the casualty.

(a) Have the casualty lie down, if possible.

(b) Tell the casualty not to move.

(c) Keep the casualty calm and reassured.

*NOTE:* Keeping the casualty calm and still will delay venom absorption.

(d) If the bite is on an extremity, do not elevate the limb but rest it in a position of function at heart level.

(e) Explain to the casualty what will be done.

(2) Apply constricting band(s).

(a) Place one above and one below the site.

*NOTE:* Use a single band above the wrist or ankle if the site is on a hand or foot.

(b) Place the bands one to two fingerwidths from the site.

(c) Tighten the bands enough to stop superficial venous circulation, but not enough to interfere with the distal pulse.

*NOTE:* Use constricting bands to slow the spread of the venom by restricting lymphatic and venous flow. Do not restrict arterial blood flow. Verify this by palpating for a distal pulse.

(d) Advance the bands, if necessary, to remain at the edges of the swelling.

## STP 8-91B15-SM-TG

- (3) Clean the wound with soap and water or antiseptic solution.
- (4) Apply cold treatment.
  - (a) Use an ice bag or chemical ice pack only.
  - (b) Place the ice bag over the bite area.
  - (c) Monitor the casualty to prevent cold injury.

### CAUTIONS

- 1. Do not use dry ice, ethyl chloride, or wet ice brine.
- 2. Do not place ice in direct contact with the skin.
- 3. Do not leave the ice pack in place for more than a few hours.
- 4. Do not pack the affected extremity in ice.

- (5) Monitor the casualty for development of breathing problems.
- (6) Check the distal pulse.

### WARNING

Antivenom, if available, may be administered only by specifically authorized personnel. Sensitivity testing should be conducted prior to administration. Use of antivenom may cause anaphylactic shock.

- 5. Record the procedure on the appropriate form.
- 6. Evacuate the casualty, if necessary.

### *Evaluation Preparation*

*Setup:* For training and evaluation, have another soldier act as the casualty. Simulate a snakebite on the casualty's arm or leg or describe its appearance to the soldier. Coach the casualty on how to answer the soldier's questions regarding signs and symptoms such as pain. To test step 2, ask the soldier what type of bite the casualty has. To test step 3, have the soldier tell you the symptoms of a poisonous snakebite. You may vary the testing by telling the soldier that the casualty cannot be evacuated for more than one hour, or that the casualty is having difficulty breathing.

*Brief soldier:* Tell the soldier to treat a casualty for a snakebite.

*Evaluation Guide*

Performance Measures	Results	
1. Expose the injury site.	P	F
2. Determine the type of snakebite.	P	F
3. Check the casualty for signs and symptoms of a poisonous bite.	P	F
4. Initiate treatment.	P	F
5. Record the procedure on the appropriate form.	P	F
6. Evacuate the casualty, if necessary.	P	F

**REFERENCES:** None

**081-833-0031**

## **INITIATE TREATMENT FOR ANAPHYLACTIC SHOCK**

### **CONDITIONS**

Necessary materials and equipment: needle, syringe, epinephrine (1:1000 solution), stethoscope, sphygmomanometer, bag-valve-mask system, and oxygen equipment.

### **STANDARDS**

Initiate treatment for anaphylactic shock, stabilizing the casualty and minimizing the effects of anaphylaxis without causing further injury to the casualty.

### **TRAINING/EVALUATION**

#### *Training Information Outline*

*NOTE:* Anaphylactic reactions occur within minutes or even seconds after contact with the substance to which the casualty is allergic. Reactions occur in the skin, respiratory system, and circulatory system.

1. Check the casualty for signs and symptoms of anaphylactic shock.
  - a. Skin.
    - (1) Flushed or ashen.
    - (2) Burning or itching.
    - (3) Edema (swelling), especially in the face, tongue, or airway.
    - (4) Urticaria (hives) spreading over the body.
    - (5) Marked swelling of the lips and cyanosis about the lips.
  - b. Respiratory.
    - (1) Tightness or pain in the chest.
    - (2) Sneezing and coughing.
    - (3) Wheezing and difficulty in breathing (dyspnea).
    - (4) Sputum (may be blood tinged).

- (5) Laryngospasms.
- (6) Glottitis.
- (7) Respiratory failure.

c. Circulatory.

- (1) Weak, rapid pulse.
- (2) Falling blood pressure.
- (3) Hypotension.
- (4) Dizziness or fainting.
- (5) Coma.

2. Transport the casualty to the aid station.

**WARNING**

Do not attempt to transport the casualty to an aid station unless the station can be reached within four minutes. Otherwise, start supportive treatment immediately and transport the casualty as soon as possible.

3. Open the airway, if necessary.

*NOTE:* In cases of airway obstruction from severe glottic edema, a cricothyroidotomy may be necessary.

4. Administer oxygen.

*NOTE:* If the anaphylaxis is due to insect bite or sting on an extremity, a constricting band should be applied 4 to 5 inches above the site for 15 to 20 minutes. The band should then be released for three to five minutes and reapplied if the reaction continues. The band should be loose enough to allow arterial flow but tight enough to restrict venous circulation. A distal pulse must be palpable.

5. Initiate an IV lifeline. (See task 081-833-0033.)

6. Administer epinephrine.

- a. Administer 0.5 ml of epinephrine, 1:1000 solution, subcutaneously (SQ) or intramuscularly (IM).

*NOTE:* Annotate the time of injection on the Field Medical Card (FMC).

## STP 8-91B15-SM-TG

b. Additional epinephrine may be required as anaphylaxis progresses. Additional incremental doses may be administered every 5 to 15 minutes IAW local SOP.

7. Provide supportive measures for the treatment of shock, respiratory failure, circulatory collapse, or cardiac arrest.

a. Infuse additional IV fluid if blood pressure continues to drop.

b. Position the patient in the supine position with legs elevated if injuries permit.

c. Apply pneumatic anti-shock garment, if necessary.

d. Administer external chest compressions, if necessary.

8. Check the casualty's blood pressure every 5 to 10 minutes until the casualty is stable.

9. Record the procedure on the appropriate form.

10. Evacuate the casualty, providing supportive measures en route.

### *Evaluation Guide*

#### **Performance Measures**

#### **Results**

1. Check the casualty for signs and symptoms of anaphylactic shock.	P	F
2. Transport the casualty to the aid station.	P	F
3. Open the airway, if necessary.	P	F
4. Administer oxygen.	P	F
5. Initiate an IV lifeline.	P	F
6. Administer epinephrine.	P	F
7. Provide supportive measures for the treatment of shock, respiratory failure, circulatory collapse, or cardiac arrest.	P	F
8. Check the casualty's blood pressure every 5 to 10 minutes until the casualty is stable.	P	F
9. Record the procedure on the appropriate form.	P	F



**Performance Measures**

10. Evacuate the casualty, providing supportive measures en route.

**Results**

P     F

**REFERENCES:** None

**081-833-0083**

**TREAT A NERVE AGENT CASUALTY IN THE FIELD**

**CONDITIONS**

You are in a chemical environment and have a casualty who is lying on the ground wearing protective outer garments, overboots, and mask carrier. You are wearing MOPP level 4 gear. Necessary materials and equipment: aid bag, impermeable litter cover, litter, and blanket.

**STANDARDS**

Complete all the steps necessary to treat a nerve agent casualty in the field without causing further injury to the casualty. Do not kneel when providing treatment.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Assess the casualty for the signs and symptoms of nerve agent poisoning.

*NOTE:* If the casualty has been exposed to vapor or aerosol, the pupils will become pinpointed immediately. However, if the nerve agent is absorbed through the skin only or by ingesting contaminated food or water, the pinpointing of the pupils will be delayed or absent.

- a. Vapor exposure.

*NOTE:* Effects from vapor exposure will occur within seconds to minutes after being exposed and will not normally worsen after being removed from the exposure for 15 to 20 minutes.

- (1) Mild.

*NOTE:* Exposure to small amounts of vapor for a brief period usually causes effects in the eyes, nose, and lungs.

- (a) Unexplained runny nose.
- (b) Unexplained sudden headache.
- (c) Sudden drooling.
- (d) Difficulty in seeing (dimness of vision and miosis).
- (e) Tightness in the chest or difficulty in breathing.

- (f) Stomach cramps.
  - (g) Nausea with or without vomiting.
  - (h) Tachycardia followed by bradycardia
- (2) Moderate.
- (a) All or most of the mild symptoms.
  - (b) Fatigue.
  - (c) Weakness.
  - (d) Muscular twitching.
- (3) Severe.

*NOTE:* Effects may occur after one breath but normally take place within several seconds of a large vapor exposure.

- (a) All or most of the mild and moderate symptoms.
- (b) Strange or confused behavior.
- (c) Wheezing, dyspnea, and coughing.
- (d) Severely pinpointed pupils.
- (e) Red eyes with tearing.
- (f) Vomiting.
- (g) Severe muscular twitching and general weakness.
- (h) Involuntary urination and defecation.
- (i) Convulsions.
- (j) Unconsciousness.
- (k) Respiratory failure.
- (l) Bradycardia.

## STP 8-91B15-SM-TG

- b. Skin (percutaneous) exposure.

*NOTE:* It is difficult to separate this type of exposure into categories due to the continued absorption of nerve agent into skin layers. Due to continued absorption, the effects from the nerve agent may be progressive in nature. They may occur from minutes up to 18 hours after exposure and continue even after the skin has been decontaminated.

*NOTE:* The larger the exposure to nerve agent, the shorter the onset time of symptoms with increased severity.

- (1) Mild exposure.

- (a) Localized sweating at the exposure site.
- (b) Muscular twitching at the exposure site.
- (c) Stomach cramps and nausea.

- (2) Moderate exposure.

- (a) Fatigue.
- (b) Weakness.
- (c) Muscular twitching.

- (3) Severe exposure.

- (a) Sudden loss of consciousness.
- (b) Vomiting.
- (c) Convulsions.
- (d) Severe muscular twitching and general weakness.
- (e) Difficulty breathing or cessation of respirations.

*NOTE:* Death would be the result of complete respiratory system failure.

### 2. Mask the casualty.

- a. Instruct the casualty to mask self if he or she is able.
- b. Position the casualty face up and mask the casualty. Do not fasten the hood at this time.

3. Check the casualty's pocket flaps and the area around the casualty for expended autoinjectors.
4. Administer the antidote.
  - a. Mild symptoms. Instruct the casualty to administer one Mark I Nerve Agent Antidote Kit. (See STP 21-1-SMCT, task 081-831-1030.)
  - b. Severe symptoms. Administer three Mark I Nerve Agent Antidote Kits and one Convulsant Antidote for Nerve Agent (CANA) autoinjector to the casualty. (See STP 21-1-SMCT, task 081-831-1031.)

*NOTE:* Removal of any liquid nerve agent on the skin, on clothing, or in the eyes should be accomplished as soon as possible after administration of the antidote. Decontamination should be performed by the casualty, if able, or by a buddy.

5. Check the casualty for signs of effectiveness of treatment.
  - a. Atropinization.
    - (1) Heart rate above 90 beats per minute.
    - (2) Reduced bronchial secretions.
    - (3) Reduced salivation.
  - b. Cessation of convulsions.
6. Administer additional atropine or CANA, if needed.
  - a. Administer additional atropine at approximately 15 minute intervals until atropinization is achieved.
  - b. Administer additional atropine at intervals of 30 minutes to 4 hours to maintain atropinization or until the casualty is evacuated to an MTF.
  - c. Administer a second and, if needed, a third CANA at 5 to 10 minute intervals to casualties suffering convulsions.

**CAUTION**

Do not give more than two additional CANA injections for a total of three.

*NOTE:* Additional atropine and the two additional CANA injections can be administered by a Combat Lifesaver, the combat medic, or other medical personnel.

7. Provide assisted ventilation for severely poisoned casualties, if equipment is available.

## STP 8-91B15-SM-TG

*NOTE:* Far forward in the field, a cricothyroidotomy is the most practical means of providing an airway for assisted ventilation using a hand-powered ventilator equipped with an NBC filter. When the casualty reaches an MTF where oxygen and a positive pressure ventilator are available, these should be employed continuously until adequate spontaneous respiration is resumed.

8. Record the number of injections given and all other treatment given on the FMC.
9. Evacuate the casualty.

### *Evaluation Guide*

Performance Measures	Results	
1. Assess the casualty for the signs and symptoms of nerve agent poisoning.	P	F
2. Mask the casualty.	P	F
3. Check the casualty's pocket flaps and the area around the casualty for expended autoinjectors.	P	F
4. Administer the antidote.	P	F
5. Check the casualty for signs of effectiveness of treatment.	P	F
6. Administer additional atropine or CANA, if needed.	P	F
7. Provide assisted ventilation for severely poisoned casualties, if equipment is available.	P	F
8. Record the number of injections given and all other treatment given on the FMC.	P	F
9. Evacuate the casualty.	P	F
10. Do not kneel while treating the casualty.	P	F
11. Do not cause further injury to the casualty.	P	F

**REFERENCES:** None

081-833-0084

**TREAT A BLOOD AGENT (HYDROGEN CYANIDE) CASUALTY IN THE FIELD****CONDITIONS**

You are in a chemical environment and have a casualty who is lying on the ground wearing protective overgarments, overboots, and mask carrier. You are wearing MOPP level 4 gear.

**STANDARDS**

Complete all the steps necessary to treat a blood agent casualty in the field.

**TRAINING/EVALUATION***Training Information Outline***CAUTION**

Blood agent (hydrogen cyanide) causes symptoms ranging from convulsions to coma. After inhaling a high concentration of blood agent, a person may become unconscious and die within minutes. Blood agents in high concentration act quickly and death may result in 15 seconds. These agents release an odor of bitter almonds or peach kernels. Anyone smelling the odors should mask immediately.

1. Check for the signs and symptoms of blood agent poisoning.
  - a. Vertigo.
  - b. Nausea.
  - c. Headache.
  - d. Increased respirations.
  - e. Pink color of the skin.
  - f. Violent convulsions.
  - g. Coma.
  - h. Respiratory arrest.
  - i. Cardiac arrest.

## STP 8-91B15-SM-TG

2. Mask the casualty immediately.
3. Initiate an IV with sodium nitrite and sodium thiosulfate.
4. Administer positive pressure ventilation, if available.

### CAUTION

No device currently exists that can provide medical assistance in a contaminated environment.

5. Record the treatment given on the Field Medical Card.
6. Evacuate the casualty.

### *Evaluation Preparation*

*Setup:* For training and evaluation, have another soldier act as the casualty and exhibit symptoms, such as hyperventilation. Tell the soldier that the casualty is exhibiting symptoms such as slow pulse rate. You may decide whether the casualty is already masked or not.

*Brief soldier:* Tell the soldier to state the signs and symptoms of blood agent poisoning, and then treat the casualty.

### *Evaluation Guide*

#### Performance Measures

#### Results

- |   |   |   |
|---|---|---|
| 1. Check for the signs and symptoms of blood agent poisoning. | P | F |
| 2. Mask the casualty immediately.                             | P | F |
| 3. Initiate an IV with sodium nitrite and sodium thiosulfate. | P | F |
| 4. Administer positive pressure ventilation, if available.    | P | F |
| 5. Record the treatment given on the Field Medical Card.      | P | F |
| 6. Evacuate the casualty.                                     | P | F |

**REFERENCES:** None



081-833-0085

**TREAT A CHOKING AGENT CASUALTY IN THE FIELD****CONDITIONS**

You are in a chemical environment and have a casualty who is lying on the ground wearing protective overgarments, overboots, and mask carrier. You are wearing MOPP level 4 gear.

**STANDARDS**

Complete all the steps necessary to treat a choking agent casualty in the field without causing further injury to the casualty.

**TRAINING/EVALUATION***Training Information Outline*

*NOTE:* The treatment available for the choking agent casualty in the field is limited. It is essential that the casualty be masked and evacuated to increase the possibility of survival.

1. Check for the signs and symptoms of choking agent poisoning.
  - a. Immediate signs and symptoms.

*NOTE:* Although heavy concentrations of poison bring on these symptoms very quickly, small doses may take up to two to six hours before there is any sign of poisoning.

- (1) Watery eyes.
- (2) Coughing.
- (3) Choking.
- (4) Tightness in the chest.
- (5) Nausea.
- (6) Vomiting.
- (7) Headache.
- b. Delayed signs and symptoms.
  - (1) Rapid shallow breathing.

## STP 8-91B15-SM-TG

- (2) Cyanosis.
  - (3) Apprehension.
  - (4) Severe coughing, producing frothy fluid.
  - (5) Weak and rapid pulse.
  - (6) Chest wall retractions.
  - (7) Pulmonary edema.
- c. Asymptomatic. The casualty has been exposed, but shows no signs or symptoms.
- 2. Position the casualty.
  - a. Supine.
  - b. In a semisitting position if dyspnea or orthopnea make the supine position impractical.
- 3. Mask the casualty but do not fasten the hood.
- 4. Treat the casualty.
  - a. Asymptomatic.
    - (1) Restrict the casualty's activities to light duties to avoid stress to the respiratory system.
    - (2) Monitor the casualty for the onset of symptoms.
  - b. Symptomatic.
    - (1) Keep the casualty at rest in a sitting position.
    - (2) Provide intermittent positive pressure ventilation, if equipment is available.
    - (3) Keep the casualty warm.
- 5. Record the treatment given on the Field Medical Card.
- 6. Evacuate the casualty.

***Evaluation Preparation***

*Setup:* For training and evaluation, have another soldier act as the casualty and exhibit signs such as choking or coughing (coach the casualty on how to answer the soldier's questions on symptoms such as headache). Tell the medic the casualty is exhibiting symptoms such as cyanosis. You may decide whether the casualty is already masked or not.

*Brief soldier:* Tell the soldier to state the signs and symptoms of a choking agent casualty, and then treat the casualty.

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Check for the signs and symptoms of choking agent poisoning.	P	F
2. Position the casualty.	P	F
3. Mask the casualty but do not fasten the hood.	P	F
4. Treat the casualty.	P	F
5. Record the treatment given on the Field Medical Card.	P	F
6. Evacuate the casualty.	P	F

**REFERENCES:** None

**081-833-0086**

**TREAT A BLISTER AGENT CASUALTY (MUSTARD, LEWISITE,  
PHOSGENE OXIME) IN THE FIELD**

**CONDITIONS**

You are in a chemical environment and are treating a casualty who is lying on the ground wearing MOPP level 4 gear. You are wearing MOPP level 4 gear. Necessary materials and equipment: casualty's canteen and a personal decontamination kit.

**STANDARDS**

Complete all the steps necessary to treat a blister agent casualty in the field without causing further injury to the casualty. Do not kneel when providing treatment.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Check for the signs and symptoms of blister agent poisoning.

*NOTE:* Moist areas of the body are highly susceptible to blister agents. Therefore, during hot weather, blister agents can cause a greater number of casualties.

- a. Skin.
  - (1) Itching.
  - (2) Redness.
  - (3) Blisters.
  - (4) Pain.
    - (a) Intense and immediate if contaminated by lewisite (L) (arsenical) or phosgene oxime.
    - (b) Delayed from 1 hour to days if contaminated by mustard (HD).
- b. Eyes (L--immediate, HD--one hour).
  - (1) Extremely sensitive to light.
  - (2) Gritty feeling.

- (3) Painful.
- (4) Watery.
- (5) Involuntary spasms of the eyelids.
- c. Respiratory tract (L--immediate, HD--four to six hours).
  - (1) Coughing.
  - (2) Sore throat.
  - (3) Frothy sputum.
  - (4) Phlegm.
- d. Systemic disorders.
  - (1) Malaise.
  - (2) Headache.
  - (3) Nausea and vomiting.
  - (4) Severe skin burns.
  - (5) Drop in white blood cells (fever, infection).
  - (6) Liver necrosis (L).

**CAUTION**

Seek overhead protection, if available.

2. Tell the casualty to take a deep breath, hold it, and close the eyes.

**CAUTION**

While the eyes are being irrigated, the breath should be held and the mouth kept closed to prevent contamination and absorption through mucous membranes.

3. Lift the casualty's mask.

## **STP 8-91B15-SM-TG**

4. Irrigate the casualty's eyes.

- a. Use water from the casualty's canteen.

*NOTE:* If the casualty's water has been contaminated, use sterile water or sterile normal saline from the aid bag.

- b. Tilt the casualty's head to one side.
- c. Tell the casualty to open the eyes as much as possible.
- d. Pour water slowly into one eye.
- e. To avoid spreading contamination, let the water run off the side of the face.
- f. Repeat steps 4a through 4e for the other eye.

*NOTE:* It may be necessary for the casualty to remask and take additional breaths if unable to hold the breath until both eyes are irrigated.

5. Use the casualty's personal decontamination kit on both the face and the portion of the mask in contact with the face.

6. Replace the casualty's mask.

7. Tell the casualty to clear and check the mask.

8. Tell the casualty to breathe normally.

*NOTE:* Further decontamination procedures will be performed by the casualty (self-aid) or buddy aid.

9. Record the treatment given on the Field Medical Card.

10. Evacuate the casualty, if necessary.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, have another soldier act as the casualty and exhibit signs such as coughing. Coach the casualty on how to answer the soldier's questions on symptoms such as headache. Tell the soldier that the casualty is exhibiting signs such as blisters. Training decontamination kits must be used.

*Brief soldier:* Tell the soldier to state the signs and symptoms of blister agent poisoning, and then treat the casualty. For step 4, have the soldier tell you what should be done.

*Evaluation Guide*

<b>Performance Measures</b>	<b>Results</b>	
1. Check for the signs and symptoms of blister agent poisoning.	P	F
2. Tell the casualty to take a deep breath, hold it, and close the eyes.	P	F
3. Lift the casualty's mask.	P	F
4. Irrigate the casualty's eyes.	P	F
5. Use the casualty's personal decontamination kit on both the face and the portion of the mask in contact with the face.	P	F
6. Replace the casualty's mask.	P	F
7. Tell the casualty to clear and check the mask.	P	F
8. Tell the casualty to breathe normally.	P	F
9. Record the treatment given on the Field Medical Card.	P	F
10. Evacuate the casualty, if necessary.	P	F
11. Do not kneel at any time.	P	F

**REFERENCES:** None

**081-833-0093**

## **SET UP A CASUALTY DECONTAMINATION STATION**

### **CONDITIONS**

You are assigned to a division level medical facility (Battle Aid Station (BAS) or Division Clearing Station (DCS)). Chemical agents are being used against the units supported by your medical treatment facility. The commander has ordered that a decontamination station and protective shelter, be established. Your current location is in a noncontaminated area, upwind from the chemical hazard. Necessary materials and equipment: medical equipment sets (MES) for patient decontamination and patient treatment, protective shelter, tentage, plastic sheeting, supertropical bleach (STB), shovels, chemical agent alarms, chemical agent monitors, engineer tape or wire, field radio or telephone, windsock, camouflage netting, water source, plastic bags, litters, litter stands, and contaminated disposal containers.

### **STANDARDS**

Set up a fully operational decontamination station in a noncontaminated area upwind from the chemical hazard. Establish the decontamination area on the downwind side of the protective shelter or other clean treatment area and clearly mark a hot line. Construct a shuffle pit as the only point of access to the clean areas. Install chemical agent alarms.

### **TRAINING/EVALUATION**

#### ***Training Information Outline***

1. Select sites for the location of the operation.
  - a. Primary and alternate sites must be selected in advance of operations.

*NOTE:* Alternate sites must be selected in conjunction with selection of the primary site. If the prevailing winds change direction, use of the primary site may no longer be possible.

- b. Site selection factors.
  - (1) The direction of the prevailing winds.
  - (2) The downwind chemical hazard.
  - (3) The availability of protective shelters or buildings to house clean treatment facilities.
  - (4) The terrain.
  - (5) Availability of cover and concealment.



*NOTE:* The protective shelter may possess visual, audible, and infrared signatures. Therefore, concealment may be compromised.

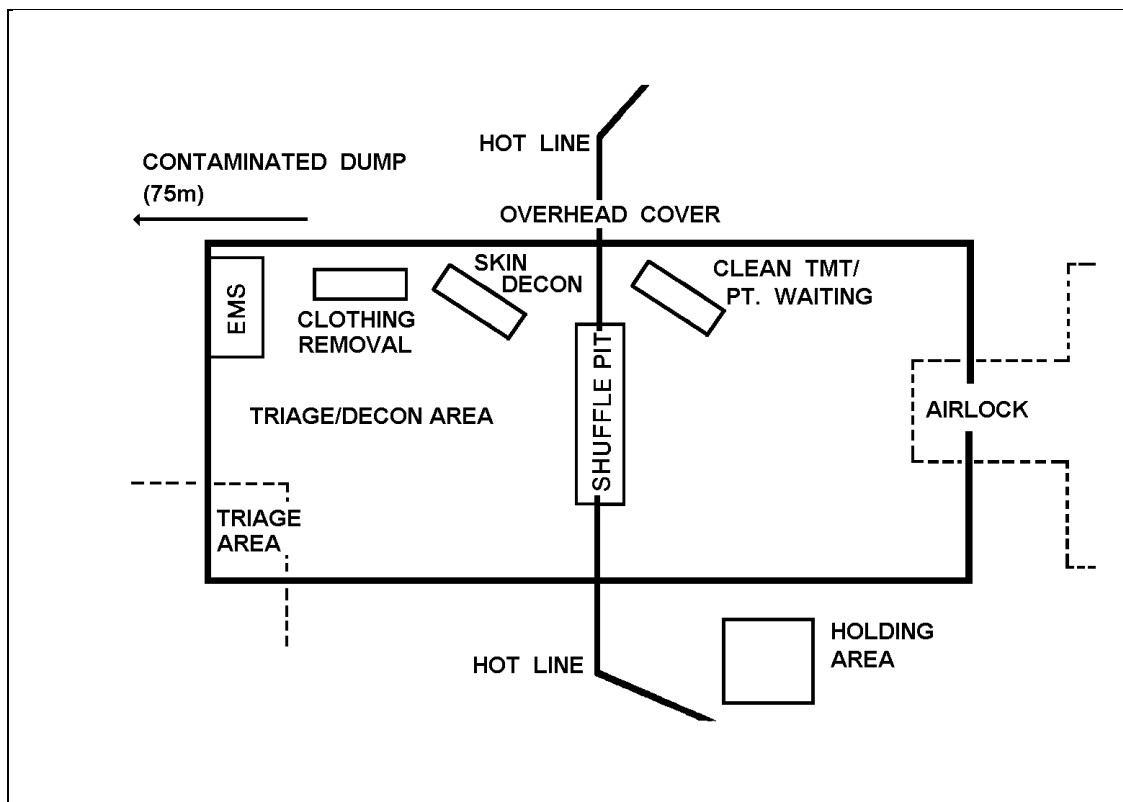
(6) The general tactical situation.

(7) The availability of evacuation routes (contaminated and clean).

(8) The location of the supported unit's vehicle decontamination point, personnel decontamination point, and MOPP exchange point.

*NOTE:* It is sometimes best to collocate with these unit decontamination sites. The arrangement of the operational areas must be kept flexible and adaptable to both the medical and tactical situations.

2. Set up the decontamination area. (See Figure 3-36.)



**Figure 3-36**

- a. Triage area.
- b. Emergency treatment area.

## STP 8-91B15-SM-TG

*NOTE:* Sometimes, triage and emergency treatment are conducted in the same area.

- c. Clothing removal area.
- d. Skin decontamination area.
- e. Overhead cover.

(1) Erect an overhead cover, at least 20 x 50 feet, to cover the decontamination area and the clean waiting and treatment area. If the protective shelter is used, the overhead cover should overlap the air lock entrance.

(2) If plastic sheeting is not available, alternate materials such as trailer covers, ponchos, or tarpaulins may be used.

3. Set up the clean side of the decontamination station on the upwind side of the contaminated areas.

*NOTE:* Erect a windsock for easy determination of wind direction.

- a. Clean waiting area.
- b. Clean treatment area.

4. Set up the shuffle pit as the only point of access between the decontamination area and the clean waiting and treatment area.

a. Turn over the soil in an area that is 1 to 2 inches deep, and of sufficient length and width to accommodate a litter stand.

*NOTE:* The shuffle pit should be wide enough that the litter bearers are not able to straddle the pit.

- b. Mix supertropical bleach (STB) with the soil in a ratio of two parts STB to three parts soil.

5. Set up the protective shelter on the upwind side of the clean waiting and treatment area.

- a. Set up the protective shelter with the air lock adjoining the clean side of the decontamination station.

b. When a protective shelter is not available for use, set up a protected medical treatment facility 30 to 50 meters upwind from the shuffle pit.

6. Set up the evacuation holding area.

- a. Set up an overhead cover of plastic sheeting at least 20 x 25 feet.
- b. Make sure the cover overlaps part of the clean treatment area and part of the protective shelter.

- c. When the protective shelter is used, set up the cover on the side opposite the generator.
- 7. Mark the hot line.
  - a. Use wire, engineer's tape, or other similar material to mark the entire perimeter of the hot line.
  - b. Ensure that the hot line is CLEARLY MARKED.
- 8. Establish ambulance points on both the "clean" and "dirty" evacuation routes.
  - a. Establish a "dirty" ambulance point downwind from the triage area in the decontamination station.
  - b. Establish a "clean" ambulance point upwind from the evacuation holding area on the clean side of the decontamination station.
- 9. Set up a contaminated (dirty) dump.
  - a. Establish the contaminated dump 75 to 100 meters downwind from the decontamination station.
  - b. Clearly mark the dump with NATO chemical warning markers.
- 10. Emplace chemical agent alarms upwind from the clean treatment area.
- 11. Camouflage areas IAW tactical directives.

### *Evaluation Guide*

Performance Measures	Results	
1. Select primary and alternate sites.	P	F
2. Set up the decontamination area.	P	F
3. Set up the clean treatment/waiting area.	P	F
4. Set up the shuffle pit.	P	F
5. Set up the protective shelter.	P	F
6. Set up the evacuation holding area.	P	F
7. Mark the hot line.	P	F
8. Establish ambulance points.	P	F

## **STP 8-91B15-SM-TG**

### **Performance Measures**

- 9. Set up a contaminated (dirty) dump.
- 10. Emplace chemical agent alarms.
- 11. Camouflage areas.

### **Results**

P	F
P	F
P	F

**REFERENCES:** None

081-833-0094

**ROUTE A CASUALTY THROUGH A DECONTAMINATION STATION****CONDITIONS**

You are assigned to a division level medical facility (BAS or DCS) with an established decontamination station. A chemical strike warning has been received and all personnel working on the contaminated side of the hot line have assumed MOPP level 4. Necessary materials and equipment: medical equipment sets (MES) for patient decontamination and patient treatment, protective shelter, tentage, and plastic sheeting.

**STANDARDS**

Route contaminated soldiers through the decontamination station. Accomplish expedient and effective decontamination and treatment without spread of contaminants or causing further injury to the casualty.

**TRAINING/EVALUATION***Training Information Outline*

*NOTE:* Accomplish efficient routing of casualties in order to promote effective decontamination and treatment while at the same time conserving valuable resources. The senior medic on each side of the "hot line" is responsible for smooth casualty flow.

1. Route casualties through the triage area.

a. Receiving. Consider all incoming ambulances and casualties chemically contaminated when chemical agents have been used.

b. Sorting. (See task 081-833-0082.)

(1) Route casualties who have immediate, life-threatening conventional injuries in addition to chemical contamination to the contaminated emergency treatment area to be stabilized prior to decontamination or rearward evacuation.

(2) Route casualties who have conventional injuries in addition to chemical contamination, but do not require emergency intervention to save life or limb, to the clothing removal/skin decontamination area.

(3) Move casualties who are stable, and will require definitive treatment at a corps level hospital, to a contaminated holding area to await rearward evacuation along a contaminated evacuation route.

*NOTE:* If the casualty load permits, spot decontaminate the casualties' protective gear before rearward evacuation.

## STP 8-91B15-SM-TG

*NOTE:* Route ambulatory casualties to the decontamination area and direct them to use self-aid or buddy-aid to decontaminate themselves.

2. Route casualties through the emergency treatment area.
  - a. Treat casualties for primary life-threatening injuries.
  - b. After treatment and stabilization, route the casualties to the clothing removal/skin decontamination area.
3. Route casualties through the clothing removal area.
  - a. A team of nonmedical augmentees performs this task under the direct supervision of medical personnel.

*NOTE:* A minimum of eight nonmedical augmentees should be supplied by the supported unit for clothing removal and skin decontamination.

- b. Everything is removed from the casualty with the exception of the protective mask and medical items (dressings, bandages, splints, and tourniquets).

4. Route casualties through the skin decontamination area.
  - a. Skin decontamination is performed by nonmedical augmentees under the supervision of medical personnel.
  - b. Bandages are removed, tourniquets replaced, and splints decontaminated in place by medical personnel.

5. Route casualties through the shuffle pit.

- a. The shuffle pit is the only point of entry to the clean treatment areas. A "hot line" separates the contaminated areas from the clean areas.

- b. Casualties are placed on the shuffle pit litter stands by members of the skin decontamination team.

- c. The Field Medical Card is copied by personnel from the clean side of the hot line, and the old card is disposed of by a member of the skin decontamination team.

- d. Casualties are removed from the shuffle pit (across the hot line) into the clean waiting/treatment area by personnel from the clean side of the hot line.

6. Route casualties through the clean treatment/waiting area.

- a. Casualties are re-triaged by the senior medic on the clean side of the hot line.

b. Casualties who require further medical treatment are placed in the clean waiting area for admission to the protective shelter.

**CAUTION**

When a protective shelter is not available, a clean treatment area should be established under an overhead cover.

c. Casualties who are stable and do not require further treatment are placed in a patient protective wrap (PPW) and moved to the clean holding area to wait for evacuation.

7. Route casualties through the protective shelter.

*NOTE:* The specific use and internal configuration of the protective shelter depends on the tactical situation, the presence or absence of toxic agents, the number of casualties, and the available means of evacuation to other MTFs.

a. Air lock.

(1) All casualties and personnel who enter the air lock must be decontaminated.

(2) A medic controls the flow of casualties and personnel through the air lock.

b. Protective shelter.

(1) Casualties are treated by the physician, physician assistant, and medics.

(2) Casualties are placed in PPWs.

(3) Casualties are passed through the air lock and placed in the evacuation holding area to await evacuation.

***Evaluation Guide***

**Performance Measures**

**Results**

1. Route casualties through the triage area.	P	F
2. Route casualties through the emergency treatment area.	P	F
3. Route casualties through the clothing removal area.	P	F

## STP 8-91B15-SM-TG

### Performance Measures

### Results

- |   |   |   |
|---|---|---|
| 4. Route casualties through the skin decontamination area.    | P | F |
| 5. Route casualties through the shuffle pit.                  | P | F |
| 6. Route casualties through the clean treatment/waiting area. | P | F |
| 7. Route casualties through the protective shelter.           | P | F |

**REFERENCES:** None



081-833-0095

**DECONTAMINATE A CASUALTY****CONDITIONS**

You are supervising the contaminated side of an established chemical decontamination station. Medical personnel and nonmedical augmentees are in MOPP level 4. Chemically contaminated casualties have been triaged by the senior medic and have been routed to your area for decontamination. Necessary materials and equipment: M258A1 or M291 decontamination kit, 5% chlorine solution, 0.5% chlorine solution, butyl rubber aprons, butyl rubber gloves, stainless steel buckets, cellulose sponges, water source, plastic bags, litters, litter stands, bandage scissors, M8 chemical detection paper, chemical agent monitor (CAM), contaminated disposal containers, bandages, gauze, and tourniquets.

**STANDARDS**

Remove the casualty's clothing without further contaminating the casualty or contaminating decontamination team personnel. Remove dressings, replace tourniquets, and decontaminate splints. Effectively decontaminate and transfer the casualty across the shuffle pit without contaminating the clean side of the hot line.

**TRAINING/EVALUATION***Training Information Outline*

*NOTE:* It is the responsibility of medical personnel to supervise casualty decontamination at medical treatment facilities. To assist in medical decontamination of casualties at echelon I, the BAS, or echelon II, the DCS, a casualty decontamination station is established. Nonmedical personnel are required to augment the decontamination station as the decontamination team, and are provided by the supported unit. (A minimum of eight augmentees should be provided.) Although casualty decontamination is routinely performed by these nonmedical personnel, the supervision of and final determination as to the completeness of the decontamination rests with medical personnel.

*NOTE:* Steps 1 through 17 will be performed by personnel in the clothing removal area. At the clothing removal area two to four persons will be working together as a team, one or two on either side of the casualty.

1. Decontaminate the casualty's hood.
  - a. Cover the mask air inlets with your hand. Instruct the casualty to do this if he or she is able.
  - b. Wipe off the front, sides, and top of the hood with a cellulose sponge soaked with 5% calcium hypochlorite solution or use the M258A1 or M291 skin decontaminating kit.

## STP 8-91B15-SM-TG

*NOTE:* The medical equipment set (MES) for chemical agent patient decontamination contains powdered calcium hypochlorite (high test hypochlorite or HTH). It is mixed with water to make the 5% and 0.5% decontaminating solutions. Liquid chlorine bleach (household bleach), a 5% solution of sodium hypochlorite, may also be used.

- c. Uncover the mask air inlets.

### 2. Cut off the casualty's hood.

*NOTE:* If the casualty is wearing the Quick Doff Hood, loosen the hood from the mask attachment points and remove it.

- a. Dip scissors in the 5% solution.

### CAUTION

Dip and scrub the scissors in the 5% solution after each separate cutting procedure and rinse your gloves in the same solution in order to reduce the spread of contamination.

- b. Cut the neck cord.
- c. Cut away the drawstring below the voicemitter.
- d. Release or cut the hood shoulder straps.
- e. Unzip the hood zipper.
- f. Begin cutting at the zipper, below the voicemitter.
- g. Proceed cutting upward, close to the filter inlet covers and eye lens outserts.
- h. Cut upward to the top of the eye lens outserts.
- i. Cut across the forehead to the outer edge of the next eye outsert.
- j. Cut downward toward the patient's shoulder, staying close to the eye lens outserts and filter inlet covers.
- k. Cut across the lower part of the voicemitter to the zipper.
- l. Dip the scissors and rinse your gloves in the 5% solution.
- m. Cut from the center of the forehead, over the top of the head.

n. Fold the left and right sides of the hood to the sides of the casualty's head, laying the sides of the hood on the litter.

3. Decontaminate the casualty's mask and exposed skin.

a. Use the M258A1 or M291 skin decontamination kit or 0.5% solution.

b. Cover the mask air inlets as in step 1a.

**CAUTION**

Use only the 0.5% solution to decontaminate the skin and the parts of the mask that touch the face. The 5% solution is corrosive and may burn the skin.

c. Decontaminate the exterior of the mask.

d. Wipe down all the exposed skin areas, to include the neck and behind the ears.

e. Uncover the mask air inlets.

4. Remove the casualty's Field Medical Card (FMC).

a. Cut the FMC tie-wire, allowing the FMC to fall into a plastic bag. If possible, do not allow any of the tie-wire to remain attached to the card. This will prevent the wire from poking a hole in the bag.

b. Seal the plastic bag and rinse the plastic bag with the 0.5% solution.

c. Place the plastic bag under the protective mask head straps.

5. Remove gross contamination on the overgarment by wiping all visible contamination spots with a sponge soaked in 5% solution.

6. Remove the casualty's protective overgarment jacket.

**CAUTION**

Dip and scrub the scissors in the 5% solution before doing each cutting procedure to avoid contaminating the inner garment or the casualty's skin.

a. Cut the sleeves from the cuff up to the shoulder of the jacket, and then through the collar. Keep the cuts close to the inside of the arms so that most of the sleeve material can be folded outward.

**CAUTION**

Medical items are not removed at the clothing removal area. Cut around medical items such as dressings, splints, and tourniquets.

- b. Unzip the jacket (or cut alongside the jacket's zipper).
  - c. Roll the chest sections to the respective sides, with the inner black liner outward. Carefully tuck the cut jacket between the arm and the chest.
  - d. Roll the cut sleeves away from the arms, exposing the black liner.
7. Remove the casualty's protective overgarment trousers.

**CAUTION**

Dip and scrub the scissors in the 5% solution before doing each cutting procedure to avoid contaminating the inner garment or the casualty.

- a. Cut the trouser legs from the ankle to the waist. Keep the cuts near the insides of the legs, along the inseam, to the crotch.
  - (1) Cut up the right leg and across the crotch of the trousers.
  - (2) Cut up the left leg, cross over the crotch cut, and continue to cut up through the waistband.

*NOTE:* Avoid cutting through the pockets.

- b. Fold the cut trouser halves onto the litter with the contaminated sides away from the casualty. Make sure the outer side of the protective overgarment does not touch the skin or undergarments of the casualty.
  - c. Roll the inner leg portion under and between the legs.
8. Remove the casualty's butyl rubber gloves.
- a. Decontaminate your butyl rubber gloves in the 5% solution.
  - b. Lift the casualty's arm up and out of the cutaway sleeve unless contraindicated by the casualty's condition.
  - c. Pull the butyl rubber gloves off by rolling the cuff over the fingers, turning the glove inside out. Do not remove the white glove liners at this time.

- d. Lower the casualty's arms and fold them across the chest.

**CAUTION**

Do not allow the arms to come into contact with the exterior of the protective overgarments.

- e. Place the gloves in a contaminated disposal container.
  - f. Decontaminate your butyl rubber gloves in the 5% solution.
9. Remove the casualty's protective overboots.
- a. Stand at the foot of the litter facing the casualty.
  - b. Cut the protective overboot laces.
  - c. Grasp the heel of the protective overboot with one hand and the toe of the protective overboot with the other hand.
  - d. Pull the heel downward, and then toward you until the overboot is removed.

*NOTE:* While you and another team member hold the casualty's raised feet, have a third member wipe down the end of the litter with the 5% solution before lowering the feet to the litter.

- e. Place the overboots in a contaminated disposal container.
10. Remove and secure the casualty's personal effects.
- a. Remove the casualty's personal articles from the overgarment and BDU pockets.
  - b. Place the articles in plastic bags.
  - c. Label the bags with the casualty's name and SSN. (Print the information on a piece of paper and place the paper in the plastic bag.)
  - d. Seal the plastic bags.
  - e. If the articles are not contaminated, return them to the casualty. If the articles may be contaminated, place the bags in the contaminated holding area until they can be decontaminated. The articles will then be returned to the casualty.
11. Remove the combat boots following the same procedures as for removing the protective overboots.

*NOTE:* Remove the boots without touching the patient's inner clothing or exposed skin.

12. Cut off the casualty's battle dress uniform (BDU).

**CAUTION**

Decontaminate your butyl rubber gloves in the 5% solution before you touch the casualty's garments or exposed skin.

- a. Cut off the BDU shirt.
  - (1) Uncross the patient's arms.
  - (2) Cut the BDU shirt using the same procedure as for the protective overgarment jacket.
  - (3) Recross the casualty's arms over the chest.
- b. Unbuckle or cut the belt material.
- c. Cut off the BDU trousers following the same procedure as for the protective overgarment trousers.

13. Cut off the casualty's undergarments.

**CAUTION**

Decontaminate your butyl rubber gloves in the 5% solution before you touch the casualty's garments or exposed skin.

- a. Cut off the underpants.
- b. Cut off the T-shirt.
- c. Cut off the brassiere, if necessary.
  - (1) Lift the casualty's arm off the chest.
  - (2) Cut between the cups.
  - (3) Cut both shoulder straps where they attach to the cup.
  - (4) Lay the cups away from the casualty onto the litter.
  - (5) Lay the shoulder straps up and over the shoulders onto the litter.

**NOTE:** At this point the white glove inner liners for a female may be removed while the casualty's arms are lifted off her chest.

14. Remove the casualty's glove inner liners.

- a. Remove the glove liners using the same procedure as for removing butyl rubber gloves.
- b. Cross the casualty's arms over the chest.

15. Remove the casualty's socks.

- a. Decontaminate your butyl rubber gloves in the 5% solution.
- b. Position yourself at the foot of the litter.
- c. Remove the sock by rolling it down over the foot, turning it inside out or by cutting the sock off.
- d. Place the socks into a contaminated disposal container.

16. Decontaminate the casualty's ID tags.

- a. Decontaminate your butyl rubber gloves in the 5% solution.
- b. Wipe the ID tags with the 0.5% solution.

17. Move the casualty to the skin decontamination area.

**CAUTION**

Observe proper body mechanics to avoid injury to your back. Use your legs instead of your back to lift the casualty.

- a. Decontaminate your butyl rubber aprons and gloves in the 5% solution.
- b. Lift the casualty out of the cutaway garments, using a three person arms carry.
  - (1) Lifter #1 slides his or her arms (palms turned upward) under the casualty's head/neck and shoulders.
  - (2) Lifter #2 slides his or her arms (palms turned upward) under the casualty's back and buttocks.
  - (3) Lifter #3 slides his or her arms (palms turned upward) under the casualty's thighs and calves.
  - (4) On the command of lifter #1, lift the casualty. (PREPARE TO LIFT: LIFT.)
- c. Once the casualty has been lifted off the litter, all three lifters stand upright and turn the casualty in against their chests.

## STP 8-91B15-SM-TG

*NOTE:* At this point, the casualty has nothing on his or her body except the protective mask and medical items (dressings, splints, tourniquets).

d. While the casualty is being held, another team member quickly removes the contaminated litter and replaces it with a clean litter. A decontaminatable mesh litter should be positioned, if available.

e. Lower the casualty onto the clean litter, in a supine position, on the command of lifter #1.

f. Carry the litter to the skin decontamination area, and then return to the clothing removal area.

g. Dispose of all contaminated material at the clothing removal area.

(1) The casualty's contaminated clothing is placed in a bag and put in a contaminated disposal container.

(2) The dirty litter is rinsed with the 5% decontamination solution and placed in a dirty litter storage area.

### CAUTION

Before obtaining another casualty, the clothing removal team should rinse their gloves and aprons in the 5% decontaminating solution and drink enough water to compensate for the heat and workload.

*NOTE:* Steps 18 through 23 are performed by personnel in the skin decontamination area. At the skin decontamination area, two to four persons will be working together as a team, one or two on either side of the casualty.

18. Perform spot skin decontamination.

a. Spot decontaminate potential areas of chemical contamination with the M258A1 or M291 Skin Decontaminating Kit or the 0.5% solution.

b. Pay particular attention to areas where gaps exist in the MOPP gear, such as the neck, lower part of the face, waistline, wrists, and ankles.

19. Remove field dressings and bandages.

*NOTE:* This step must be performed by medical personnel.

a. Carefully cut off dressings and bandages.

b. Cut off any remaining clothing that was covered by the dressings and bandages.

c. Decontaminate the exposed areas of skin with the 0.5% solution.



- d. Irrigate the wound with the 0.5% solution if the wound is suspected to be contaminated.

*NOTE:* Bandages are not replaced unless there is a critical medical need (for example, to control bleeding). Bandages are replaced when the casualty is in the clean (uncontaminated) treatment area.

- e. Place removed dressings and clothing in a contaminated disposal container.

20. Replace any tourniquets.

*NOTE:* Medical personnel must perform this step.

- a. Decontaminate an area above the existing tourniquet.
- b. Place a new tourniquet 1/2 to 1 inch above the old tourniquet.
- c. Remove the old tourniquet.
- d. Remove any remaining clothing or dressings covered by the old tourniquet.
- e. Decontaminate the newly exposed areas.
- f. Place the removed tourniquet, dressings, and clothing in a contaminated disposal container.

21. Decontaminate any splints.

*NOTE:* Splints are only removed by a physician.

- a. Stabilize the splinted extremity.
- b. Decontaminate the splint and the extremity by liberally flushing them with the 0.5% solution.

**CAUTION**

Do not remove any part of a traction splint from a femoral fracture.

22. Check the casualty for contamination.

- a. Use M8 chemical agent detector paper or the chemical agent monitor (CAM).
- b. Decontaminate any areas of detected contamination, as necessary.

**CAUTION**

Under no circumstances should a casualty who has not been entirely decontaminated be moved across the hot line. If a wound or splinted area cannot be entirely decontaminated, inform the senior medic. Do not move the casualty across the hot line. He must be treated on the contaminated side of the casualty decontamination station.

23. Transfer the casualty to the shuffle pit.

- a. Personnel decontaminate themselves by rinsing their butyl rubber gloves and apron with the 5% solution.
- b. Carry the patient to the shuffle pit on the skin decontamination litter.
- c. Place the litter on the litter stand located in the shuffle pit.
- d. Lift the casualty from the decontamination litter using the same technique described in step 17.
- e. Remove the decontamination litter from the stand and a medic from the clean side will replace it with a clean litter.
- f. Lower the casualty onto the clean litter and move back from the hot line.

*NOTE:* Do not step across the hot line. Personnel from the clean side of the hot line will take the casualty to the clean treatment station.

***Evaluation Guide***

**Performance Measures**

**Results**

- |   |   |   |
|---|---|---|
| 1. Decontaminate the casualty's hood.                     | P | F |
| 2. Cut off the casualty's hood.                           | P | F |
| 3. Decontaminate the casualty's mask and exposed skin.    | P | F |
| 4. Remove the casualty's Field Medical Card (FMC).        | P | F |
| 5. Remove gross contamination.                            | P | F |
| 6. Remove the casualty's protective overgarment jacket.   | P | F |
| 7. Remove the casualty's protective overgarment trousers. | P | F |

**Performance Measures****Results**

8. Remove the casualty's butyl rubber gloves.	P	F
9. Remove the casualty's protective overboots.	P	F
10. Remove and secure the casualty's personal effects.	P	F
11. Remove the casualty's combat boots.	P	F
12. Remove the casualty's battle dress uniform (BDU).	P	F
13. Cut off the casualty's undergarments.	P	F
14. Remove the casualty's glove inner liners.	P	F
15. Remove the casualty's socks.	P	F
16. Decontaminate the casualty's ID tags.	P	F
17. Move the casualty to the skin decontamination area.	P	F
18. Perform spot skin decontamination.	P	F
19. Remove field dressings and bandages.	P	F
20. Replace any tourniquets.	P	F
21. Decontaminate any splints.	P	F
22. Check the casualty for contamination.	P	F
23. Transfer the casualty to the shuffle pit.	P	F

**REFERENCES:** None

**081-833-0047**

## **INITIATE TREATMENT FOR HYPOVOLEMIC SHOCK**

### **CONDITIONS**

You are in the field and are surveying a casualty who is suffering from a severe loss of body fluids. All other more serious injuries have been treated. Necessary materials and equipment: intravenous (IV) infusion set, IV fluids, splints, stethoscope, sphygmomanometer, and a blanket or poncho.

### **STANDARDS**

Initiate treatment for hypovolemic shock, stabilizing the casualty, minimizing the effect of shock, and preparing for immediate evacuation without further injury to the casualty.

### **TRAINING/EVALUATION**

#### *Training Information Outline*

*NOTE:* Hypovolemic shock results when there is a decrease in the volume of circulating fluids (blood and plasma) in the body. If dehydration (loss of body water) is present at the time of injury, shock will develop more rapidly.

1. Reassure the casualty to reduce anxiety.

*NOTE:* Anxiety increases the heart rate, which worsens the casualty's condition.

2. Maintain the airway.

*NOTE:* Administer oxygen, if available. (See task 081-833-0019.)

3. Initiate an IV. (See task 081-833-0033.)

*NOTE:* To replace fluid loss accompanying injury, Ringer's lactate is the fluid of choice. Normal saline is the second choice.

4. Maintain the IV flow.

- a. Continue the flow wide open until the systolic blood pressure stabilizes at greater than 90 mm Hg.

- (1) The usual amount is one to two liters of fluid or 300 ml for each 100 ml of blood loss.
- (2) A palpable radial pulse usually indicates that the casualty has a systolic blood pressure of about 80 mm Hg.

b. Once the blood pressure has stabilized, decrease the IV flow rate to maintain the systolic blood pressure above 90 mm Hg.

5. Elevate the casualty's legs.

a. Elevate the casualty's legs above chest level, without lowering the head below chest level.

*NOTE:* Splint leg or ankle fractures before elevating the legs, if necessary.

b. If the casualty is on a litter, elevate the foot of the litter.

6. Maintain normal body temperature.

a. Watch for signs of sweating or chilling.

b. Cover the casualty in cold weather.

c. Do not cover the casualty in hot weather unless signs of chilling are noted.

7. Monitor the casualty.

*NOTE:* Give nothing by mouth. Moisten the casualty's lips with a wet cloth.

a. Check vital signs every 5 minutes until they return to normal, and then check every 15 minutes.

b. Check the casualty's level of consciousness.

c. Check capillary refill.

*NOTE:* If the blood pressure is unstable or drops, the pneumatic anti-shock garment should be applied by qualified personnel.

8. Record the procedure on the Field Medical Card.

9. Evacuate the casualty.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, have another soldier act as the casualty. For step 3, have the soldier state what actions are taken when an IV infusion is initiated.

*Brief soldier:* Tell the soldier to initiate treatment for hypovolemic shock.

*Evaluation Guide*

<b>Performance Measures</b>	<b>Results</b>	
1. Reassure the casualty to reduce anxiety.	P	F
2. Maintain the airway.	P	F
3. Initiate an IV.	P	F
4. Maintain the IV flow.	P	F
5. Elevate the casualty's legs.	P	F
6. Maintain normal body temperature.	P	F
7. Monitor the casualty.	P	F
8. Record the procedure on the Field Medical Card.	P	F
9. Evacuate the casualty.	P	F
10. Do not cause further injury to the casualty.	P	F

**REFERENCES:** None

081-833-3011

**APPLY PNEUMATIC ANTI-SHOCK GARMENT****CONDITIONS**

A soldier has signs or symptoms of shock. Life saving measures have been completed, but the casualty has not responded to treatment for shock. Another soldier is available to assist. Necessary materials and equipment: pneumatic anti-shock garment, stethoscope, sphygmomanometer, and watch.

**STANDARDS**

Apply the pneumatic anti-shock garment without causing further injury to the casualty. Complete all steps in order. Complete steps 1 through 8 within 90 seconds, and complete the entire process within 10 minutes.

**TRAINING/EVALUATION***Training Information Outline***WARNINGS**

1. Do not use the pneumatic anti-shock garment for psychogenic, anaphylactic, or septic shock. Do not apply the pneumatic anti-shock garment if the casualty's injury will be further aggravated by the pneumatic anti-shock garment, for example if the casualty has a protruding, impaled object such as a stick or a knife in the leg or abdomen, or an open fracture of a lower extremity.
2. If the pneumatic anti-shock garment is applied incorrectly, death could result.
3. The pneumatic anti-shock garment should not be used without direction of a physician if:
  - a. Trauma involves significant head injury.
  - b. Bleeding into the chest or chest wound is present.
  - c. The casualty is in heart failure with pulmonary edema.
  - d. Trauma is above the level of the pneumatic anti-shock garment application.
  - e. Pregnancy exists or is suspected.
  - f. Aortic aneurysm is suspected.

**WARNINGS**

1. If the casualty has an injury to which you must have access, do not apply the pneumatic anti-shock garment to the injury.
2. If the femur of either leg is fractured, a traction splint should be applied before the pneumatic anti-shock garment is applied.

## STP 8-91B15-SM-TG

1. Open the pneumatic anti-shock garment kit and remove the trousers and accessories.

*NOTE:* There are several different models of pneumatic anti-shock garments. The models may have one, two, or three chambers. Follow the manufacturer's instructions on the pneumatic anti-shock garment container.

2. Unfold the pneumatic anti-shock garment and unfasten the Velcro closures.

*NOTE:* If the terrain is rough and a backboard is available, the use of a backboard under the pneumatic anti-shock garment will help in positioning the trousers. The backboard may remain in place.

3. Lay the trousers flat.

- a. Unfold the trousers so the left leg of the pneumatic anti-shock garment overlaps the right leg.
- b. Ensure that the outside Velcro fasteners face the ground and that the valves are on the outside adjacent to the ground.
- c. If there is sufficient space below the casualty's feet, lay the trousers out with the leg sections in the same direction as the casualty's legs.
- d. If there is insufficient space below the casualty's feet, lay the trousers beside the casualty with the leg sections in the same direction as the casualty's legs. Position the top of the trousers just below the casualty's lowest rib.

### CAUTION

To prevent squeezing the chest of an extremely short casualty, slide the trousers past the lowest rib and do not use the abdominal section.

*NOTE:* If there are sharp objects in the casualty's pants, remove them before applying the pneumatic anti-shock garment.

4. Place the casualty on the trousers in the supine position.

*NOTE:* Restrictive or bulky clothing could prevent pneumatic anti-shock garment application from stabilizing the casualty. Cut away any clothing which will interfere with the trousers.

### WARNING

If a back injury is suspected, log-roll the casualty onto the pneumatic anti-shock garment.

- a. Lift the casualty's legs high enough to slide the trousers underneath.



- b. Slide the trousers under the casualty's legs and up to the buttocks area.
- c. Lift the casualty's buttocks high enough to slide the trousers under the buttocks.
- d. Slide the pneumatic anti-shock garment up toward the casualty's waist. Position the garment so the top of the trousers is just below the casualty's lowest rib.

**WARNING**

Do not lift the casualty any higher than is absolutely necessary. If the casualty has a pelvic injury or a traction splint, serious injury or extreme discomfort can result when the pneumatic anti-shock garment is applied to the casualty. With this type of injury the medic should position the casualty and direct the assistant to slide the trousers into position.

- 5. Wrap the casualty's legs.

*NOTE:* Either of the casualty's legs may be wrapped first; however, normally the left leg is wrapped first.

- a. Wrap the pneumatic anti-shock garment around the casualty's leg.
  - b. Smooth the leg of the pneumatic anti-shock garment around the casualty's leg.
  - c. Align the Velcro strips.
  - d. Press the Velcro strips firmly together to secure the seam of the trouser leg.
  - e. Repeat steps 5a through 5d for the other leg.
- 6. Apply the abdominal section of the pneumatic anti-shock garment.
    - a. Wrap the abdominal section of the pneumatic anti-shock garment.
    - b. Align the Velcro strips.
    - c. Press the Velcro strips firmly together to secure the pneumatic anti-shock garment.
  - 7. Attach the foot pump hoses.
    - a. Connect each short tube on the pump to a leg tube on the trousers using a twisting motion.
    - b. Connect the long tube on the foot pump to the abdominal section using a twisting motion.

8. Inflate the leg sections of the trousers.

**CAUTION**

Do not inflate the pneumatic anti-shock garment if the casualty's systolic blood pressure is higher than 90 mm Hg.

- a. Open the stopcock valve on each leg section by turning the valve knob to the "OPEN" position.

*NOTE:* Ensure that the stopcock valve to the abdominal section is closed.

- b. Check the casualty's vital signs and foot (pedal) pulses while inflating the leg sections.
- c. Continue inflation until the casualty's vital signs are stable, the air release valves open, or until the Velcro starts to crackle or stretch apart.
- d. Close the stopcock valve to the leg section(s).

9. Inflate the abdominal section, if necessary.

*NOTE:* If inflation of the leg sections alone was not adequate to stabilize the casualty, the abdominal section should be inflated.

- a. Open the stopcock valve to the abdominal section.
- b. Inflate the abdominal section following the same procedure used for the leg sections.
- c. Recheck the vital signs.
- d. Close the stopcock valve to the abdominal section.
10. Initiate an IV using Ringer's lactate, if not already done.
11. Monitor the casualty's blood pressure to ensure it remains stable.
12. Monitor the pneumatic anti-shock garment pressure.
- a. If the pneumatic anti-shock garment looks and feels soft, reinflate it until the Velcro strips start to stretch apart.
- b. Stop inflating the pneumatic anti-shock garment if a loud, constant sound is heard coming from the air release valve.

*NOTE:* A loud, constant sound coming from the air release valve indicates the pneumatic anti-shock garment is overinflated.

### **CAUTIONS**

1. Do not remove the pneumatic anti-shock garment until ordered to do so by a physician.
2. If the casualty must be evacuated by air, it should be done at a low altitude and at low pneumatic anti-shock garment pressure.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, a mannequin will be used. Under no circumstances will another soldier act as a simulated casualty. Select a scenario that will allow you to evaluate the soldier.

*Brief soldier:* Tell the soldier to apply the pneumatic anti-shock garment. Ask the soldier to describe and explain his actions.

### ***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Open the pneumatic anti-shock garment kit and remove the trousers and accessories.	P	F
2. Open the folded trousers and unfasten the Velcro closures.	P	F
3. Lay the trousers flat.	P	F
4. Place the casualty in the supine position on the trousers.	P	F
5. Wrap the casualty's legs.	P	F
6. Apply the abdominal section of the pneumatic anti-shock garment.	P	F
7. Attach the foot pump hoses.	P	F
8. Inflate the leg sections.	P	F
9. Inflate the abdominal section, if necessary.	P	F
10. Monitor the casualty's blood pressure.	P	F
11. Initiate an IV, if not already done.	P	F
12. Monitor the pneumatic anti-shock garment pressure.	P	F

**STP 8-91B15-SM-TG**

**REFERENCES:** None

081-833-3012

**DEFLATE PNEUMATIC ANTI-SHOCK GARMENT****CONDITIONS**

A casualty has a pneumatic anti-shock garment applied. The casualty's vital signs are stable and a doctor is present. At least two intravenous routes have been established for the administration of blood products. Necessary materials and equipment: sphygmomanometer, stethoscope, watch, IV equipment, IV solutions, and blood products.

**STANDARDS**

Remove all the air from the trousers. Deflate the abdominal section first and then the leg section(s). Sequential deflation of the pneumatic anti-shock garment takes at least 20 to 60 minutes to allow sufficient time to evaluate the casualty's response.

**TRAINING/EVALUATION***Training Information Outline*

1. Take and record the casualty's vital signs.
  - a. Take the casualty's vital signs every 5 to 10 minutes.
  - b. Report the casualty's status to the physician when the vital signs have been stable for 5 to 10 minutes.

**WARNING**

Shock will result if the pneumatic anti-shock garment is deflated before the casualty's vital signs are stable.

**CAUTION**

A physician familiar with the pneumatic anti-shock garment must be present during deflation. The pneumatic anti-shock garment will not be deflated until the physician's orders are received.

2. Deflate the abdominal section.

**WARNING**

The abdominal section will always be deflated before the leg sections so that the casualty's stable vital signs are maintained.

*NOTE:* Begin the procedure only when the casualty's blood pressure is at least 90 mm Hg systolic.

a. Deflate the abdominal section of the pneumatic anti-shock garment by slowly turning the stopcock valve until a small amount of air escapes.

*NOTE:* A hissing sound will be heard when air is escaping.

b. Close the valve.

c. Take the casualty's vital signs every 5 to 10 minutes.

(1) If the casualty's blood pressure is lower than 90 mm Hg systolic or the blood pressure has dropped precipitously (more than 5 mm Hg), infuse 100 to 200 milliliters of IV solution over a 10 minute period until the casualty's blood pressure stabilizes at or above 90 mm Hg systolic.

(2) If the casualty's vital signs do not become stable after IV infusion, reinflate the pneumatic anti-shock garment and wait until the casualty's vital signs have been stable for 5 to 10 minutes before beginning to deflate the pneumatic anti-shock garment again.

(3) Consult the attending physician if the two steps above fail to stabilize the casualty.

d. Deflate in increments, monitoring vital signs, until the abdominal section is deflated.

3. Deflate one leg section.

a. Turn the stopcock valve slowly until a small amount of air escapes.

b. Close the valve.

c. Take the casualty's vital signs every 5 to 10 minutes as in steps 2c(1) through 2c(3).

d. Deflate in increments, monitoring vital signs, until the leg section is deflated.

4. Deflate the other leg section.

a. Turn the stopcock valve slowly until a small amount of air escapes.

- b. Close the valve.
  - c. Take the casualty's vital signs every 5 to 10 minutes as in steps 2c(1) through 2c(3).
  - d. Deflate in increments, monitoring vital signs, until the leg section is deflated.
5. If the vital signs remain stable after each section is deflated, unfasten the Velcro strips for each pneumatic anti-shock garment section.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, a mannequin will be used. Under no circumstances will another soldier act as a simulated casualty to evaluate this task. Soldiers can practice applying pneumatic anti-shock garment on each other but will orally indicate inflation and deflation.

*Brief soldier:* Tell the soldier to deflate the pneumatic anti-shock garment.

### ***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Take and record the casualty's vital signs.	P	F
2. Deflate the abdominal section.	P	F
3. Deflate one leg section.	P	F
4. Deflate the other leg section.	P	F
5. If the vital signs remain stable after each section is deflated, unfasten the Velcro strips for each pneumatic anti-shock garment section.	P	F

**REFERENCES:** None

**081-833-3013**

**MAINTAIN PNEUMATIC ANTI-SHOCK GARMENT**

**CONDITIONS**

The pneumatic anti-shock garment and equipment have been removed from a casualty. Necessary materials and equipment: repair kit, soap and water, sponge or cloth, storage case, and sewing kit.

**STANDARDS**

The pneumatic anti-shock garment hoses are free of any damage; the trousers are free of rips, tears, or holes; and the valves are functional. All components are free from dirt, biological fluids, and liquids.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Check the hoses for damage.
  - a. Look at and feel the hoses for cracks, crimping, holes, and dry rot.
  - b. Replace damaged hoses.
    - (1) Take similar sized tubing of adequate length from the repair kit.
    - (2) Disconnect the old tubing from the "Y" connector and/or pump by pulling firmly.
    - (3) Connect the new tube by using a twisting motion to slide it onto the "Y" connector and/or pump.
    - (4) Clear the tube by blowing into it.
2. Test the pump for air leaks.
  - a. Connect all tubes to the pneumatic anti-shock garment.
  - b. Close all valves.
  - c. Pump the foot pump until resistance is felt.

*NOTE:* No leakage is indicated if resistance is felt after the pump has been pumped several times.

*NOTE:* If air leaks are present, repair or replace the manual pump.



3. Check the trousers for damage.
  - a. Look for tears, holes, or anything which may cause the air chambers not to inflate.
  - b. Inflate the three air chambers one at a time. Look and listen for leaks.
  - c. If the trousers are in disrepair, refer to the repair kit instructions.
4. Clean the pneumatic anti-shock garment.

**CAUTION**

If the pneumatic anti-shock garment was used on a casualty with an infectious disease, the pneumatic anti-shock garment and case must be sent to CMS for decontamination.

*NOTE:* When washing the garment, the inflation/deflation valves must be in the closed position to prevent water from entering the air chambers.

- a. Use a sponge or cloth.
- b. Wash with soap and water.
- c. Rinse all soap and water from the pneumatic anti-shock garment with clear water.
- d. Hang the pneumatic anti-shock garment to dry where air will reach both sides.

**CAUTION**

The pneumatic anti-shock garment must be air dried. An automatic dryer will not be used because of probable damage to the garment.

5. Fold the pneumatic anti-shock garment so that all hoses and valves are on the outside and will be facing up or down in the pneumatic anti-shock garment kit.

**CAUTION**

Damage will occur if the trousers are folded with the valves and hose stems inside the fold.

6. Replace the pneumatic anti-shock garment in the bag or case.

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Check the hoses for damage.	P	F
2. Test the pump for air leaks.	P	F
3. Check the trousers for damage.	P	F
4. Clean the pneumatic anti-shock garment.	P	F
5. Fold the pneumatic anti-shock garment.	P	F
6. Repack the pneumatic anti-shock garment in the bag or case.	P	F

**REFERENCES:** None

081-833-3025

**PREPARE FOR URINARY CATHETERIZATION****CONDITIONS**

A patient care handwash has been performed. Necessary materials and equipment: catheter kit and container for contaminated waste.

**STANDARDS**

Prepare a patient and equipment for urinary catheterization without violating aseptic technique or causing injury to the patient. Complete all steps in order.

**TRAINING/EVALUATION***Training Information Outline*

1. Explain the procedure to the patient.
2. Provide privacy for the patient.
3. Position the patient.
  - a. Female--supine, with the legs extended and spread approximately 45°.

*NOTE:* The knees may be flexed, or the legs extended.

- b. Male--supine, with the legs extended.
4. Remove the outer wrapper from the catheter kit.

**CAUTION**

If the kit is damaged, soiled, waterspotted, or outdated, it must be discarded and replaced.

5. Position the catheter kit.
  - a. Female--between the patient's legs at approximately knee level.
  - b. Male--at the patient's near hip.
6. Unfold the inner wrapper, creating a sterile field.

**CAUTION**

Touching the inside of the inner wrapper will contaminate the unit.

7. Put on sterile gloves.
8. Position the first drape (plastic coated).
  - a. Aseptically remove and fully unfold the first drape.
  - b. Grasp the drape at the top edge (plastic side away) and fold the top of the drape over the gloved hands to make a cuff.
  - c. Position the drape.
    - (1) Female. Place the drape, plastic side down, on the bed between the patient's legs. Slip the cuffed edge under the patient's buttocks.
    - (2) Male. Place the drape, plastic side down, across the patient's thighs. Slip the cuffed edge under the penis.
9. Position the second drape (fenestrated).
  - a. Aseptically remove and fully unfold the second drape.
  - b. Place the drape over the genital area.
    - (1) Female--expose the labia.
    - (2) Male--extend the penis through the drape opening.
10. Open the package of sterile lubricant and squeeze it into a corner of the compartment in which it was stored.
11. Open the package of antiseptic solution and pour it over the cotton balls.

*NOTE:* If the kit comes with pretreated antiseptic swabs, simply open the package.
12. Remove the plastic cover from the catheter and tubing.

*NOTE:* Not all catheter and tubing come with a plastic cover.
13. Test the catheter's balloon when inserting an indwelling catheter.

- a. Attach the prefilled syringe to the valve on the catheter and twist it to lock it in place.
- b. Inject the contents of the syringe (usually 5 to 10 cc of water) into the balloon and observe for leaks.

*NOTE:* If the balloon leaks, discard the equipment and begin the procedure again with new equipment.

- c. Deflate the balloon by aspirating the water back into the syringe and leave the syringe in place.

14. Replace the catheter back into the kit.

### *Evaluation Guide*

<b>Performance Measures</b>	<b>Results</b>	
1. Explain the procedure to the patient.	P	F
2. Provide privacy for the patient.	P	F
3. Position the patient.	P	F
4. Remove the outer wrapper from the catheter kit.	P	F
5. Position the catheter kit.	P	F
6. Unfold the inner wrapper, creating a sterile field.	P	F
7. Put on sterile gloves.	P	F
8. Position the first drape (plastic coated).	P	F
9. Position the second drape (fenestrated).	P	F
10. Open the package of sterile lubricant and squeeze it into a corner of the compartment in which it was stored.	P	F
11. Open the package of antiseptic solution and pour it over the cotton balls.	P	F
12. Remove the plastic cover from the catheter and tubing.	P	F
13. Test the catheter's balloon when inserting an indwelling catheter.	P	F
14. Replace the catheter back into the kit.	P	F

**REFERENCES:** None

**081-833-3017**

**INSERT A URINARY CATHETER**

**CONDITIONS**

You have verified a doctor's order to insert a urinary catheter. The patient has been draped and all equipment has been prepared. You are wearing sterile gloves. Necessary materials and equipment: a container for contaminated waste.

**STANDARDS**

Insert a urinary catheter without violating aseptic technique or causing further injury to the patient.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Clean the urinary meatus with the prepared cotton balls or swabs.

*NOTE:* Cotton balls should be held with forceps.

- a. Females.

- (1) Gently spread the labia open with the nondominant hand.

*NOTE:* This hand is now considered contaminated.

- (a) Place the thumb and forefinger between the labia minora.

- (b) Separate the labia and pull up slightly.

- (2) With the dominant hand, clean the far labia with a cotton ball or swab, moving from the clitoris toward the anus.

- (3) Use a second cotton ball or swab to clean the near labia.

- (4) Use a third cotton ball or swab to clean down the center, directly over the urinary meatus.

- (5) Keep the labia spread throughout the remainder of the procedure.

- b. Males.

- (1) Support the penis with the nondominant hand.

*NOTE:* This hand is now considered contaminated.

(2) With the dominant hand, clean the penis with a cotton ball or swab, moving in a circular motion from the urinary meatus toward the base of the penis.

(3) Repeat the procedure, using a second and third cotton ball or swab.

2. Lubricate the catheter.

- a. Pick up the catheter with the dominant hand about 4 inches from the tip.
- b. Keep the distal end of the catheter coiled in the palm of the hand.
- c. Apply lubricant to the catheter tip.

3. Instruct the patient to relax and breathe through the mouth.

4. Insert the catheter.

a. Female.

- (1) Gently insert the catheter into the urethra about 2 to 3 inches or until resistance is met.
- (2) Continue to advance the catheter until urine begins to flow (about 2 to 3 inches further).
- (3) Release the labia and hold the catheter securely with the nondominant hand.
- (4) Place the distal end of the catheter in the collection basin.

*NOTE:* If the vagina is inadvertently catheterized, do not remove the catheter. Assemble new equipment and repeat the procedure. Leaving the first catheter in place temporarily will prevent catheterizing the vagina a second time.

b. Male.

- (1) Draw the penis upward and forward to a 60° to 90° angle to the legs.
- (2) Gently insert the catheter into the urethra, advancing it about 7 to 8 inches or until resistance is felt.
- (3) Continue to advance the catheter until urine begins to flow (about 2 to 3 inches further).
- (4) Lower the penis and hold the catheter securely with the nondominant hand, resting the hand on the patient's pubis for support.

## STP 8-91B15-SM-TG

- (5) Place the distal end of the catheter in the collection basin.

*NOTE:* With some commercially prepared catheterization kits, the catheter is preconnected to the drainage tubing of the collecting bag.

5. Obtain a urine specimen, if ordered.
  - a. Place the sterile specimen container from the kit into the collection basin.
  - b. Pinch the catheter with the nondominant hand to stop urine flow.
  - c. With the dominant hand, pick up the distal end of the catheter and hold it over the specimen container.
  - d. Release the pinch and allow sufficient urine to drain into the specimen container (about 30 cc).
  - e. Repinch the catheter, place the distal end into the collection basin, and release the pinch, allowing the urine to flow.
  - f. Place the lid on the specimen container and set it aside.

*NOTE:* If using a commercial kit with the catheter and drainage set preconnected, do not disconnect the catheter to obtain a specimen. Obtain the specimen from the drainage bag at the end of the procedure. The first specimen taken from a new sterile drainage set is considered sterile.

6. Inflate the balloon if an indwelling catheter has been inserted.
  - a. Inflate the balloon with the water in the prefilled syringe.

*NOTE:* If the balloon is difficult to inflate, advance the catheter another 1/2 to 1 inch to ensure that the catheter tip is fully within the bladder.

- b. Tug gently on the catheter to ensure that the balloon is fully inflated and seated in the bladder.
  - c. Remove the syringe from the catheter using a twisting motion.
7. Attach the distal end of the catheter to the drainage tubing of the collection set, if not preconnected by the manufacturer.
8. Remove the drapes and gloves.
9. Tape the catheter in place.
  - a. Female--to the inner thigh.



- b. Male--to the abdomen or inner thigh.

*NOTE:* The penis may be positioned up or down (facing the patient's head or feet), depending upon the patient's diagnosis, the physician's order, and/or the patient's comfort preference.

10. Secure the drainage bag to the side of the bed on the bottom of the bed frame.

**CAUTION**

Do not secure the drainage bag to the bed siderails or loop the drainage tubing over or through the siderails.

11. Reposition the patient.
12. Dispose of the used equipment and clean the area.

*NOTE:* Destroy the syringe and dispose of it IAW local SOP for infectious waste.

13. Report and record the procedure.

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Clean the urinary meatus with the prepared cotton balls or swabs.	P	F
2. Lubricate the catheter.	P	F
3. Instruct the patient to relax and breathe through the mouth.	P	F
4. Insert the catheter.	P	F
5. Obtain a urine specimen, if ordered.	P	F
6. Inflate the balloon if an indwelling catheter has been inserted.	P	F
7. Attach the distal end of the catheter to the drainage tubing of the collection set, if not preconnected by the manufacturer.	P	F
8. Remove the drapes and gloves.	P	F
9. Tape the catheter in place.	P	F
10. Secure the drainage bag to the side of the bed on the bottom of the bed frame.	P	F

## **STP 8-91B15-SM-TG**

### **Performance Measures**

11. Reposition the patient.

P F

12. Dispose of the used equipment and clean the area.

P F

13. Report and record the procedure.

P F

**REFERENCES:** None

081-833-3024

## PREPARE FOR NASOGASTRIC INTUBATION

### CONDITIONS

Necessary materials and equipment: hand washing facilities, nasogastric tube, water-soluble lubricant, and adhesive tape.

### STANDARDS

Prepare a patient and equipment for nasogastric intubation. Complete all steps in order.

### TRAINING/EVALUATION

#### *Training Information Outline*

1. Perform a patient care handwash.
2. Explain the procedure to the patient.
  - a. Tell the patient that a tube will be inserted along the nasal passage and that he or she may feel some discomfort.
  - b. Tell the patient that breathing through the mouth, panting, and swallowing can help in passing the tube.
  - c. Ask the patient about any history of nasal injury or septal deviation.
  - d. Tell the patient that the tube must be placed about 20 inches down the nasogastric passageway.
  - e. Tell the patient that the procedure may cause him or her to gag.
3. Position the patient.
  - a. Position the responsive, awake, and alert patient in the Fowler's position. Elevate the head of the bed to approximately 30° to 45°.
  - b. Place a comatose or unconscious patient in the lateral position.
    - (1) Turn the patient onto his or her side.
    - (2) Flex the patient's uppermost arm across the abdomen or support it on the body and hip.

## STP 8-91B15-SM-TG

4. Cut four or five pieces of tape 3 to 4 inches long and attach one end of each where they will be easily accessible.
5. Unwrap the nasogastric tube from the plastic wrapper.
6. Measure the tube for insertion.
  - a. Use the tube to measure the distance between the earlobe and the tip of the nose.
  - b. Add the distance between the bridge of the nose and the tip of the xiphoid process.
  - c. Mark the total length to be inserted with a piece of tape.
7. Lubricate 2 to 3 inches of the distal end of the tube with water-soluble lubricant.

### *Evaluation Guide*

#### **Performance Measures**

#### **Results**

1. Perform a patient care handwash.	P	F
2. Explain the procedure to the patient.	P	F
3. Position the patient.	P	F
4. Cut four or five pieces of tape 3 to 4 inches long and attach one end of each where they will be easily accessible.	P	F
5. Unwrap the nasogastric tube from the plastic wrapper.	P	F
6. Measure the tube for insertion.	P	F
7. Lubricate 2 to 3 inches of the distal end of the tube with water-soluble lubricant.	P	F

**REFERENCES:** None

081-833-3022

**INSERT A NASOGASTRIC TUBE****CONDITIONS**

You have a doctor's order to insert a nasogastric tube. You have performed a patient care handwash. The patient and the equipment have been prepared for nasogastric intubation. Necessary materials and equipment: stethoscope, 10 cc syringe, nasogastric tube, container for contaminated waste, a 50 cc syringe, stethoscope, precut strips of adhesive tape, gloves, and a cup containing water and a straw.

**STANDARDS**

Insert a nasogastric tube without causing further injury to the patient.

**TRAINING/EVALUATION***Training Information Outline*

1. Put on gloves.

**WARNING**

Wear gloves for self-protection against transmission of contaminants whenever handling body fluids.

2. Insert the lubricated tip of the tube into the selected nostril.
3. Advance the tube into the nostril.
  - a. Gently rotate the tube at the point where the nostril drops into the pharynx, if necessary.
  - b. Instruct the patient to swallow to aid advancement of the tube.

*NOTE:* The patient may take sips of water through a straw, if permitted.

- c. Advance the tube 3 to 5 inches with each swallow.

**CAUTIONS**

1. Do not force the advancement of the tube.
2. Remove the tube completely and relubricate it if the patient chokes, coughs, or if resistance is felt. Allow the patient to rest for two to three minutes and repeat the procedure. If a second attempt at insertion fails, notify the doctor immediately.

4. Continue advancing the tube until the tape marker touches the nostril.
  5. Check the placement of the tube.
    - a. Aspiration.
      - (1) Attach a syringe to the end of the tube. (If a bulb syringe is used, the bulb must be depressed prior to attaching it to the tube.)
      - (2) Aspirate the stomach contents.

*NOTE:* The presence of stomach contents in the tube or syringe indicates correct placement.

    - (3) Remove the syringe.  - b. Auscultation.
    - (1) Position the diaphragm of the stethoscope over the patient's stomach (about 2 inches below the sternum).
    - (2) Inject 10 cc of air into the tube.
    - (3) Listen for the sound of the air entering the stomach (gurgling or whooshing sound) which indicates correct tube placement. Proceed to step 6 if placement is correct.
    - (4) Check for tube placement in the trachea if air is not heard entering the stomach.
      - (a) Reinject 10 cc of air into the tube.
      - (b) Auscultate over the lung field.
      - (c) Remove the tube if air injection is heard over the lungs.
    - (5) Repeat steps 2 through 5b(3) to insert the tube.
6. Secure the tube to the patient's nose with the tape.

7. Connect the tube to the suction apparatus, if ordered.
8. Remove gloves and wash hands.
9. Report and record the procedure.

### *Evaluation Guide*

#### **Performance Measures**

#### **Results**

- |   |   |   |
|---|---|---|
| 1. Put on gloves.   | P | F |
| 2. Introduce the lubricated tip of the tube into the selected nostril.    | P | F |
| 3. Advance the tube into the nostril.                                     | P | F |
| 4. Continue advancing the tube until the tape marker touches the nostril. | P | F |
| 5. Check the placement of the tube.                                       | P | F |
| 6. Secure the tube to the patient's nose with the tape.                   | P | F |
| 7. Connect the tube to the suction apparatus, if ordered.                 | P | F |
| 8. Remove gloves and wash hands.  | P | F |
| 9. Report and record the procedure.                                       | P | F |

**REFERENCES:** None

**081-833-3023**

## **REMOVE A NASOGASTRIC TUBE**

### **CONDITIONS**

You have a doctor's order to remove a nasogastric tube. You have identified the patient and have performed a patient care handwash. The nasogastric tube has been disconnected from the suction machine, if necessary. Necessary materials and equipment: emesis basin, gloves, container for contaminated waste, and clean towels.

### **STANDARDS**

Remove a nasogastric tube without causing unnecessary injury to the patient.

### **TRAINING/EVALUATION**

#### *Training Information Outline*

1. Turn the patient's head to the side.
2. Peel off the tape strips from the nose and nostrils.
3. Put on gloves.

#### **WARNING**

Wear gloves for self-protection against transmission of contaminants whenever handling body fluids.

4. Clamp or pinch off the end of the tube to prevent release of gastric contents.
5. Remove the tube.
  - a. Use a gentle, continuous motion.

#### **CAUTION**

If resistance is felt, do not attempt to remove the tube and notify the supervisor.

- b. Pull the tube out rapidly to minimize discomfort.



**CAUTION**

If the nasogastric tube is removed carelessly, damage could be done to the tissue of the nasogastric passageway.

*NOTE:* If the patient vomits, stop the procedure immediately. Hand the patient an emesis basin or place it under his or her chin. Hand the patient a clean towel or wipe the patient's chin and face with the towel. Continue the procedure when the patient is ready.

6. Discard soiled equipment in the container for contaminated waste.
7. Remove the gloves.
8. Perform a patient care handwash.
9. Record the procedure on the appropriate form.

***Evaluation Guide*****Performance Measures****Results**

- |   |   |   |
|---|---|---|
| 1. Turn the patient's head to the side.   | P | F |
| 2. Peel off the tape strips from the nose and nostrils.                           | P | F |
| 3. Put on gloves.   | P | F |
| 4. Clamp or pinch off the end of the tube to prevent release of gastric contents. | P | F |
| 5. Remove the tube.   | P | F |
| 6. Discard soiled equipment in the container for contaminated waste.              | P | F |
| 7. Remove the gloves.   | P | F |
| 8. Perform a patient care handwash.   | P | F |
| 9. Record the procedure on the appropriate form.                                  | P | F |

**REFERENCES:** None

**081-833-0080**

**TRIAGE CASUALTIES ON A CONVENTIONAL BATTLEFIELD**

**CONDITIONS**

You are in the field and have several casualties with conventional injuries.

**STANDARDS**

Complete all the steps necessary to establish priorities for the treatment and evacuation of casualties.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Survey the situation.
  - a. Sort the casualties and allocate treatment.
    - (1) Survey and classify the casualties for the most efficient use of available medical personnel and supplies.
    - (2) Give available treatment first to the casualties who have the best chance of survival.
    - (3) A primary goal is to locate and return to duty troops with minor wounds. However, at no time should abandonment of a single casualty be considered.
    - (4) Triage establishes the order of treatment, not whether treatment is given. It is usually the responsibility of the senior medical person.
  - b. Determine the tactical and environmental situation.
    - (1) Whether casualties must be transported to a more secure area for treatment.
    - (2) The number and location of the injured and severity of injuries.
    - (3) Available assistance (self-aid, buddy-aid, medical personnel).
    - (4) Evacuation support capabilities and requirements.

*NOTE:* Nuclear weapons exposure will not be used as a criteria for sorting. Field experience with these injuries does not exist.

2. Survey the casualties and establish priorities for treatment.

a. Immediate--casualties whose conditions demand immediate treatment to save life, limb, or eyesight. This category has the highest priority.

(1) Airway obstruction.

(2) Respiratory and cardiorespiratory distress from otherwise treatable injuries (for example, electrical shock, drowning, or chemical exposure).

*NOTE:* A casualty with cardiorespiratory distress may not be classified "Immediate" on the battlefield. The casualty may be classified "Expectant," contingent upon such things as the situation, number of casualties, and support.

(3) Massive external bleeding.

(4) Shock.

(5) Burns of the face, neck, hands, feet, or perineum and genitalia.

*NOTE:* After all life or limb threatening conditions have been successfully treated, give no further treatment to the casualty until all other "Immediate" casualties have been treated. Salvage of life takes priority over salvage of limb.

b. Delayed--casualties who have less risk of loss of life or limb if treatment is delayed.

(1) Open wounds of the chest without respiratory distress.

(2) Open or penetrating abdominal injuries without shock.

(3) Severe eye injuries without hope of saving eyesight.

(4) Other open wounds.

(5) Fractures.

(6) Second and third degree burns (not involving the face, hands, feet, genitalia, and perineum) covering 20% or more of the total body surface area.

c. Minimal--"Walking wounded", can be treated by self-aid or buddy-aid.

(1) Minor lacerations and contusions.

(2) Sprains and strains.

## STP 8-91B15-SM-TG

(3) Minor combat stress problems.

(4) First or second degree burns (not involving the face, hands, feet, genitalia, and perineum) covering under 20% of the total body surface area.

d. Expectant--casualties who are so critically injured that only complicated and prolonged treatment can improve life expectancy. This category is to be used only if resources are limited. If in doubt as to the severity of the injury, place the casualty in one of the other categories.

(1) Massive head injuries with signs of impending death.

(2) Burns, mostly third degree, covering more than 85% of the total body surface area.

3. Record all treatment given on the Field Medical Card.

4. Establish MEDEVAC priorities by precedence category.

a. Urgent. Evacuation is required as soon as possible, but within two hours, to save life, limb, or eyesight. Generally, casualties whose conditions cannot be controlled and have the greatest opportunity for survival are placed in this category.

(1) Cardiorespiratory distress.

(2) Shock not responding to IV therapy.

(3) Prolonged unconsciousness.

(4) Head injuries with signs of increasing intracranial pressure.

(5) Burns covering 20% to 85% of the total body surface area.

b. Urgent Surgical. Evacuation is required for casualties who must receive far forward surgical intervention to save life and stabilize for further evacuation.

(1) Decreased circulation in the extremities.

(2) Open chest and/or abdominal wounds with decreased blood pressure.

(3) Penetrating wounds.

(4) Uncontrollable bleeding or open fractures with severe bleeding.

(5) Severe facial injuries.

c. Priority. Evacuation is required within four hours or the casualty's condition could get worse and become an "urgent" or "urgent surgical" category condition. Generally, this category applies to any casualty whose condition is not stabilized or who is at risk of trauma-related complications.

(1) Closed-chest injuries, such as rib fractures without a flail segment, or other injuries that interfere with respiration.

(2) Brief periods of unconsciousness.

(3) Soft tissue injuries and open or closed fractures.

(4) Abdominal injuries with no decreased blood pressure.

(5) Eye injuries that do not threaten eyesight.

(6) Spinal injuries.

(7) Burns on the hands, face, feet, genitalia, or perineum even if under 20% of the total body surface area.

d. Routine. Evacuation is required within 24 hours for further care. Immediate evacuation is not critical. Generally, casualties who can be controlled without jeopardizing their condition or who can be managed by the evacuating facility for up to 24 hours.

(1) Burns covering 20% to 80% of the total body surface area if the casualty is receiving and responding to IV therapy.

(2) Simple fractures.

(3) Open wounds including chest injuries without respiratory distress.

(4) Psychiatric cases.

(5) Terminal cases.

e. Convenience. Evacuation by medical vehicle is a matter of convenience rather than necessity.

(1) Minor open wounds.

(2) Sprains and strains.

(3) Minor burns under 20% of total body surface area.

## STP 8-91B15-SM-TG

5. Prepare the evacuation request.
  - a. Pickup location--provided by the unit leader.
  - b. Radio frequency, call sign, and suffix--provided by the radio/telephone operator (RTO).
  - c. Number of patients by precedence category.
  - d. Special equipment required--none, hoist, extraction equipment, ventilator.
  - e. Number of patients by type--litter, ambulatory.
  - f. Security of the pickup site.
  - g. Method of marking the pickup site--provided by the unit leader.
  - h. Patients' nationality and status.
  - i. NBC contamination, if any.

*NOTE:* As a minimum, the first five items must be provided in the exact sequence listed.

### *Evaluation Guide*

Performance Measures	Result	
1. Survey the situation.	P	F
2. Survey the casualties.	P	F
3. Initiate treatment in the correct sequence.	P	F
4. Record the treatment given.	P	F
5. Assign the MEDEVAC priorities.	P	F
6. Prepare the evacuation request.	P	F

**REFERENCES:** None

081-833-0082

**TRIAGE CASUALTIES ON AN INTEGRATED BATTLEFIELD****CONDITIONS**

You are in a chemical environment and have casualties with conventional injuries and/or signs and symptoms of chemical agent poisoning. Both you and the casualties are in MOPP level 4. Necessary materials and equipment: aid bag.

**STANDARDS**

Complete all the steps necessary to correctly establish priorities for the treatment and evacuation of casualties on an integrated battlefield.

**TRAINING/EVALUATION***Training Information Outline*

1. Survey the situation.
  - a. Number and location of the injured.
  - b. Severity of the injuries.
  - c. Assistance available (self-aid or buddy-aid).
  - d. Evacuation support capabilities.
  - e. Type of chemical agents used, if known.
2. Survey the individual casualties. (See task 081-833-0015.)
  - a. Survey for conventional injuries.
  - b. Survey for signs and symptoms of chemical agent poisoning.
    - (1) Determine if the casualty responds to commands.
      - (a) Check the casualty's response to simple directions, such as "Hold up your right arm."
      - (b) Ask the casualty to describe any symptoms.
    - (2) Check for symptoms of chemical agent poisoning. (See tasks 081-833-0083 through 081-833-0086.)

## STP 8-91B15-SM-TG

### 3. Establish priorities for treatment.

#### a. Immediate.

(1) No signs and symptoms of chemical agent poisoning.

(2) Presence of life-threatening conventional injuries.

#### b. Chemical immediate.

(1) Presence of signs and symptoms of severe chemical agent poisoning.

(2) No conventional injuries.

#### c. Delayed.

(1) Presence of mild signs and symptoms of chemical agent poisoning.

(2) Presence of conventional injuries that are not life-threatening.

#### d. Minimal.

(1) No signs and symptoms of chemical agent poisoning.

(2) Presence of minor conventional injuries.

#### e. Expectant.

(1) Presence of severe signs and symptoms of both chemical agent poisoning and life-threatening conventional injuries.

(2) No conventional injuries and not breathing due to chemical agent poisoning.

*NOTE:* Expectant casualties are so critically injured that only prolonged and complicated treatment may offer increased life expectancy.

### 4. Initiate treatment in the following order.

#### a. Chemical agent poisoning.

#### b. Conventional injuries.

*NOTE:* Employ casualties who have only minor injuries or minimal chemical agent exposure to provide buddy-aid for those with more severe injuries.



*NOTE:* Sorting and treatment should be done almost simultaneously.

- 5. Move the casualties to the collection point.
- 6. Record all observations and treatment on the appropriate form.
- 7. Establish evacuation priorities. (See task 081-833-0080.)

***Evaluation Preparation***

*Setup:* You will need several soldiers in MOPP level 4 to act as the casualties. Use a moulage kit or similar materials to simulate conventional wounds. Coach the soldiers on signs and symptoms of nerve agent poisoning to exhibit.

*Brief soldier:* Tell the soldier to triage casualties on an integrated battlefield.

***Evaluation Guide***

Performance Measures	Results	
1. Survey the situation.	P	F
2. Survey the individual casualties.	P	F
3. Establish priorities for treatment.	P	F
4. Initiate treatment.	P	F
5. Move the casualties to the collection point.	P	F
6. Record all observations and treatment on the appropriate form.	P	F
7. Establish evacuation priorities.	P	F

**REFERENCES:** None

071-334-4002

**ESTABLISH A HELICOPTER LANDING POINT****CONDITIONS**

An area must be prepared for a helicopter landing site. Necessary materials and equipment: smoke grenades, strobe lights, flashlights or vehicle lights, marker panels, and equipment and personnel to clear the site when required.

**STANDARDS**

The site is large enough for a helicopter to land and take off. Mark and identify all obstacles that cannot be removed, and identify the touchdown point on the landing site.

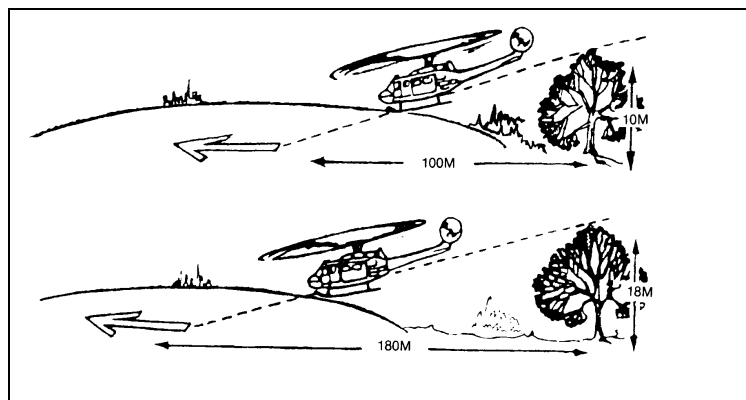
**TRAINING/EVALUATION***Training Information Outline*

1. Select the landing site. The factors which should be considered are:

a. The size of the landing site.

(1) A helicopter requires a relatively level landing area 30 meters in diameter. This does not mean that a loaded helicopter can land and take off from an area of that size. Most helicopters cannot go straight up or down when fully loaded. Therefore, a larger site and better approach and departure routes are required.

(2) When obstacles are in the approach or departure routes, a 10 to 1 ratio must be used to lay out the landing site. (See Figure 3-37.)



**Figure 3-37**

For example, during the approach and departure, if the helicopter must fly over trees that are 15 meters high, the landing site must be at least 150 meters long ( $10 \times 15 = 150$  meters).

b. The ground slope of the landing site. When selecting the landing site, the ground slope must be no more than 15 degrees. Helicopters cannot safely land on a slope of more than 15 degrees.

- (1) When the ground slope is under 7 degrees, the helicopter should land upslope. (See Figure 3-38.)

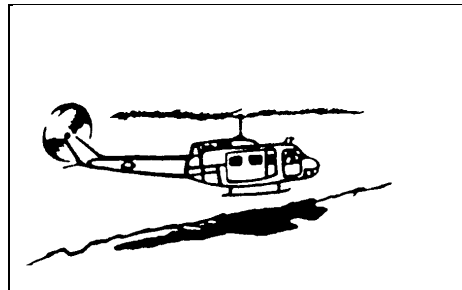


Figure 3-38

- (2) When the ground slope is seven to 15 degrees, the helicopter must land sideslope. (See Figure 3-39.)

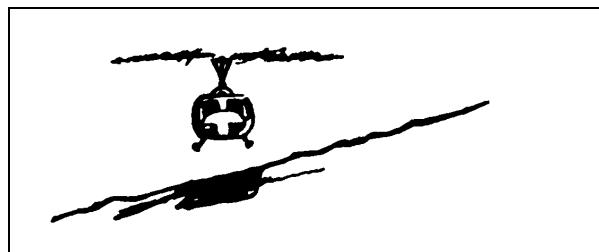


Figure 3-39

c. Surface conditions.

(1) The ground must be firm enough that the helicopter does not bog down during loading or unloading. If firm ground cannot be found, the pilot must be told. The pilot can hover at the landing site during the loading or unloading.

(2) Rotor wash on dusty, sandy, or snow-covered surfaces may cause loss of visual contact with the ground. Therefore, these areas should be avoided.

## STP 8-91B15-SM-TG

(3) Loose debris that can be kicked up by the rotor wash must be removed from the landing site. Loose debris can cause damage to the blades or engines.

### d. Obstacles.

(1) Landing sites should be free of tall trees, telephone lines, power lines or poles, and similar obstructions on the approach or departure ends of the landing site.

(2) Obstructions that cannot be removed (such as large rocks, stumps, or holes) must be marked clearly within the landing site.

### 2. Establish security for the landing site. Two points to think about are that--

a. Landing sites should offer some security from enemy observation and direct fire. Good landing sites will allow the helicopter to land and depart without exposing it to unneeded risks.

b. Security is normally established around the entire landing site.

### 3. Mark the landing site and touchdown point.

a. When and how the landing site should be marked is based on the mission, capabilities, and situation of the unit concerned. Normally, the only mark or signals required are smoke (colored) and a signalman. VS-17 marker panels may be used to mark the landing site, but MUST NOT be used any closer than 50 feet to the touchdown point. In addition to identifying the landing site, smoke will give the pilot information on the wind direction and speed.

b. At night, the landing site and the touchdown point are marked by an inverted "Y" composed of four lights. (See Figure 3-40.) Strobe lights, flashlights, or vehicle lights may also be used to mark the landing site. The marking system used will be fully explained to the pilot when contact is made.

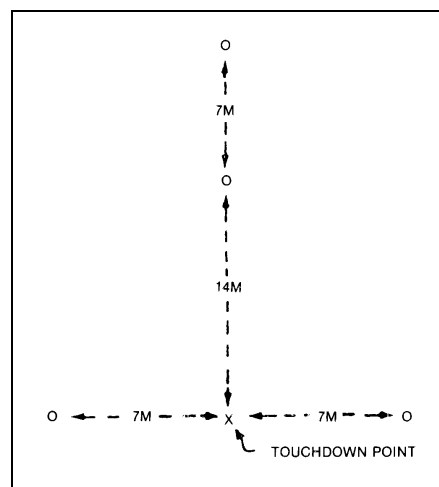


Figure 3-40

*Evaluation Preparation*

*Setup:* At the test site, provide all equipment, information, and personnel given in the task conditions statement.

*Brief soldier:* Tell the soldier that he or she is to select and prepare a helicopter landing site.

*Evaluation Guide*

Performance Measures	Results	
1. Select a site large enough to permit the helicopter to land and take off	P	F
2. Remove or mark all obstacles and debris.	P	F
3. Mark or identify the landing site and the touchdown point.	P	F

REFERENCES:	Required	Related
		FM 7-8 FM 21-60 FM 57-38

**071-334-4001**

**GUIDE A HELICOPTER TO LANDING POINT**

**CONDITIONS**

A landing site has been set up for medical evacuation, and a MEDEVAC helicopter is on its way to the site. Necessary materials and equipment: an FM radio (AN/PRC-77) and a copy of the MEDEVAC request.

**STANDARDS**

Guide a helicopter to a safe landing by identifying the landing site to the pilot and controlling the landing using correct arm-and-hand signals.

**TRAINING/EVALUATION**

*Training Information Outline*

1. As the aircraft approaches, provide the pilot with tactical and security information, and conditions that may affect the landing such as terrain, weather, landing site markings, and possible obstacles.
  - a. Confirm information or answer any questions the pilot may have pertaining to the landing site.
  - b. Maintain communications with the pilot during the entire operation.
2. Identify the landing site and guide the pilot in.
  - a. Once the helicopter is within your area, the pilot will establish radio contact with the unit for positive identification.
  - b. The pilot will be oriented to the landing site by using the clock method (12 o'clock is always the direction of flight). Tell the pilot the time position of your location.

EXAMPLE: "The LZ is now at 3 o'clock to your position."

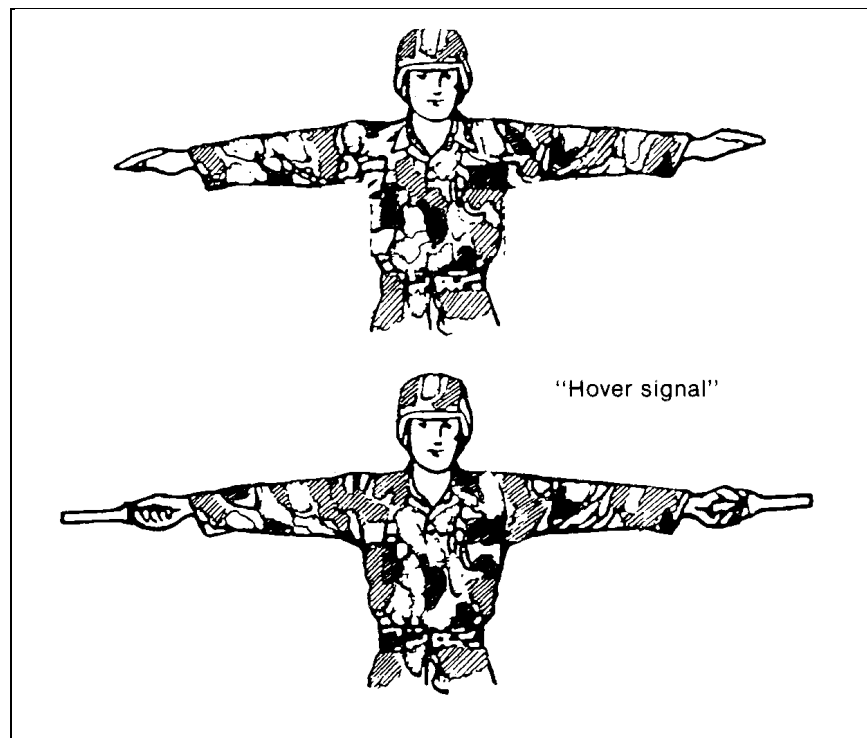
- c. Mark or identify the landing site.
  - (1) Day--The only signals required are colored smoke and a signalman. VS-17 marker panels may be used to mark the landing site, but are NOT used any closer than 50 feet to the touchdown point. In addition to identifying the landing site, smoke will give the pilot the wind direction and speed.
  - (2) Night--The landing site and the touchdown point are marked by an inverted "Y" composed of four lights.

3. Use arm-and-hand signals. (See Figures 3-41 through 3-48.)

a. The position of the signalman when directing a helicopter is to the right front of the aircraft where he or she can be seen best by the pilot. The signalman's position for utility helicopters is 30 meters to the right front of the aircraft during day or night operations.

b. Signals at night are given by using lighted batons or flashlights. In the illustrations, one of the men is using a lighted wand. This is a flashlight with a plastic wand attached to the end. The flashlight is used when there is decreased visibility.

c. The speed of the arm movement indicates the desired speed of aircraft compliance with the signal.



**Figure 3-41**

*NOTE:* Use the hover signal to change from one arm-and-hand signal to another. For example, assume that the signalman desires to land an approaching helicopter and that the signalman has given the helicopter the "move ahead" signal. The helicopter is now positioned directly over the desired landing area. Before giving the helicopter the signal to move downward, the signalman should execute the "hover" signal. This gives the pilot time to change from the "move ahead" to the "move downward" signals.

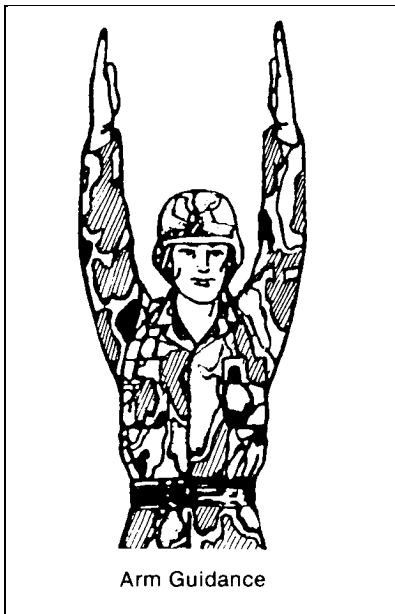


Figure 3-42

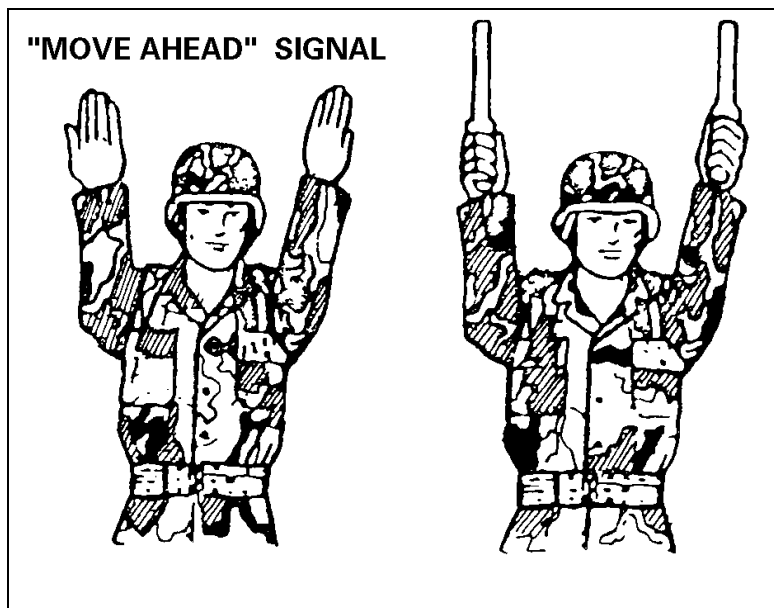


Figure 3-43



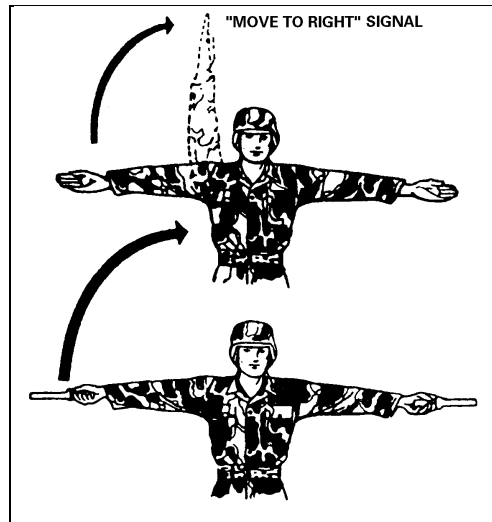


Figure 3-44

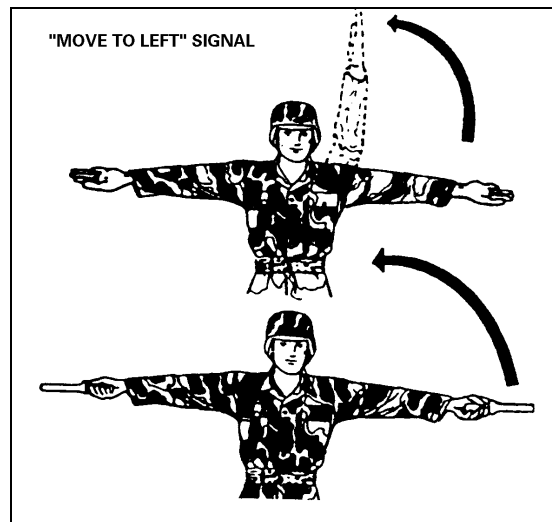


Figure 3-45

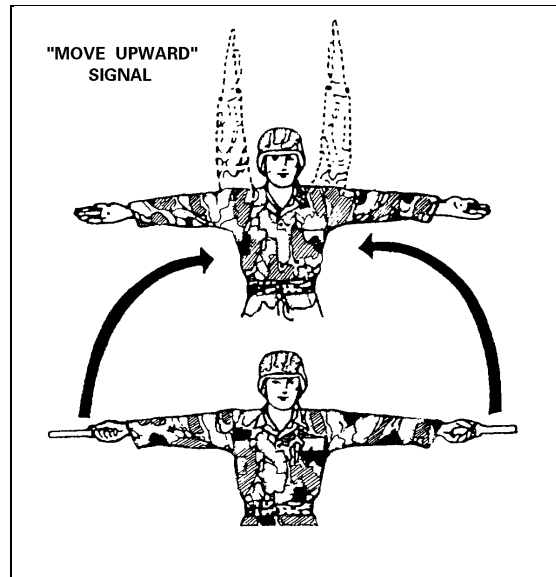


Figure 3-46

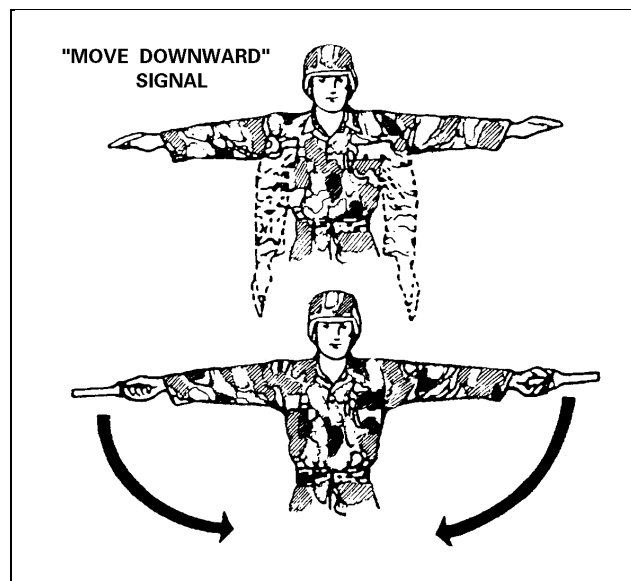


Figure 3-47

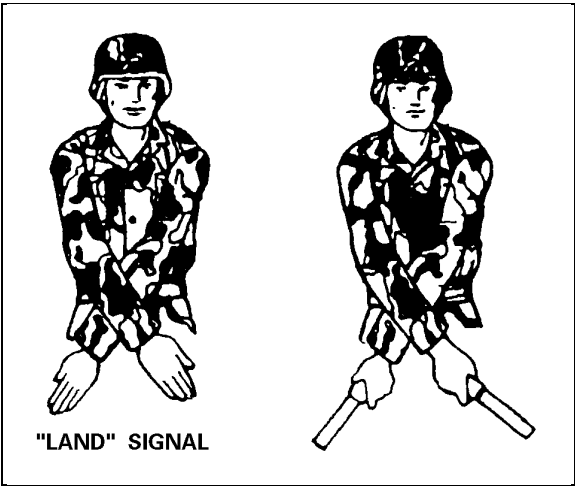


Figure 3-48

*Evaluation Preparation*

*Setup:* At the test site, provide all equipment and information given in the task conditions statement. For test purposes, the tester may act as the pilot.

*Brief soldier:* Tell the soldier that he or she is to land the helicopter.

*Evaluation Guide*

Performance Measures	Results	
1. Advise the pilot of changes to the information given.	P	F
2. Identify the landing site to the pilot.	P	F
3. Control the landing using arm-and-hand signals.	P	F

**REFERENCES:**      *Required*

*Related*

FM 7-8  
FM 21-60  
FM 57-38

**SECTION II**  
**SKILL LEVEL 2 TASKS**

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**081-830-3015**

**PREPARE INTUBATION EQUIPMENT**

**CONDITIONS**

Necessary materials and equipment: laryngoscope, one spare light bulb, two charged D-cell batteries, laryngoscope blade with a light bulb inserted, assorted sizes of oral endotracheal (ET) tubes, 10 cc syringe, and a stylet.

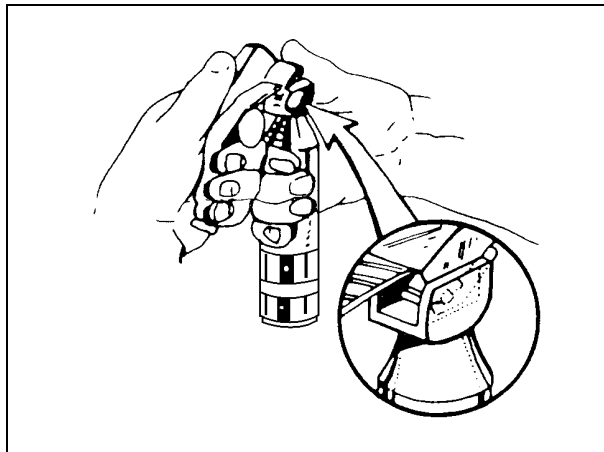
**STANDARDS**

Perform all the steps necessary to prepare intubation equipment.

**TRAINING/EVALUATION**

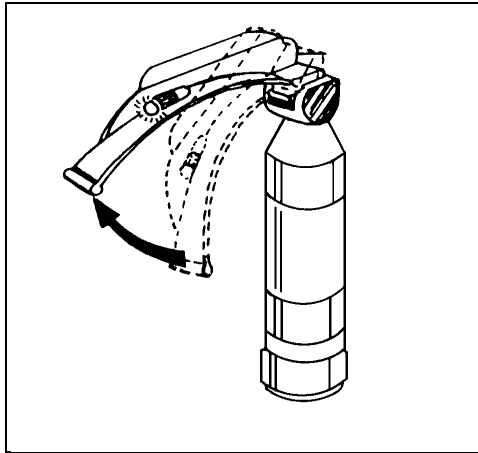
*Training Information Outline*

1. Attach the laryngoscope blade to the laryngoscope.
  - a. Hook the blade to the connector on the top of the laryngoscope. (See Figure 3-49.)



**Figure 3-49**

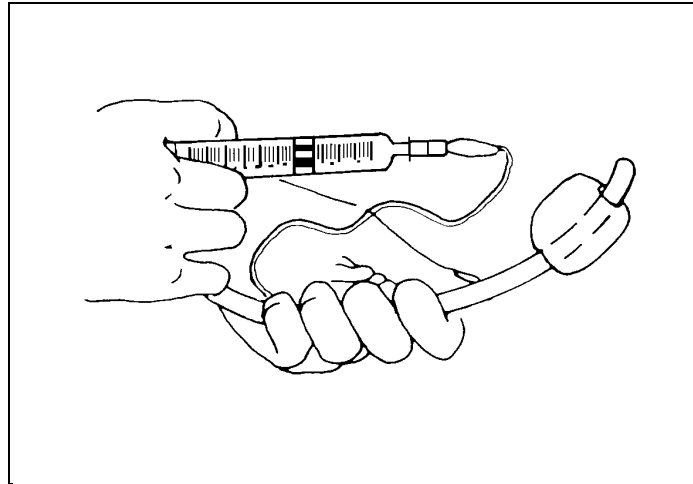
- b. Lift the blade at a 90° angle to the laryngoscope to lock the blade in place. (See Figure 3-50.)



**Figure 3-50**

- (1) If the light comes on, the laryngoscope is ready for use.
  - (2) If the light does not come on, replace the batteries and/or light bulb and retest.
  - (3) If the light does not work after replacing the batteries and light bulb, obtain another laryngoscope and blade and repeat the procedure.
2. Select the correct ET tube size.
    - a. The average adult male will need a 7.5 or 8 millimeter diameter tube.
    - b. The average adult female will need a 7 or 7.5 millimeter diameter tube.
  3. Fill the 10 cc syringe with air.
    - a. Hold the syringe in one hand.
    - b. Push the plunger forward as far as it will go with the other hand.
    - c. Pull the plunger back to the 10 cc mark.
  4. Attach the syringe to the ET tube.
    - a. Hold the ET tube cuff valve with one hand.
    - b. With the other hand attach the syringe into the cuff valve on the ET tube.

5. Inflate the ET tube cuff with 10 cc of air by depressing the syringe plunger. (See Figure 3-51.)



**Figure 3-51**

*NOTE:* Inflatable cuffs are used to attain an airtight seal, preventing aspiration. If the cuff leaks, another ET tube must be obtained, and the procedure must be repeated.

6. Deflate the cuff on the ET tube by pulling the syringe plunger back until the plunger reaches the 10 cc mark on the syringe.
7. Insert the stylet into the ET tube.

*NOTE:* The stylet gives added rigidity to the tube and facilitates maintenance of tube curvature.

- a. Insert the stylet into the ET tube so the tip of the stylet is recessed 1/2 inch from the tip of the ET tube.
- b. Bend the other end of the stylet at a 90° angle so that it can go no further into the ET tube.

**CAUTION**

If the stylet is not bent, the tip could advance past the end of the tube and puncture or lacerate the airway.

*Evaluation Guide*

Performance Measures	Results	
1. Attach the laryngoscope blade to the laryngoscope.	P	F
2. Select the correct ET tube size.	P	F
3. Fill the 10 cc syringe with air.	P	F
4. Attach the syringe to the ET tube.	P	F
5. Inflate the ET tube cuff.	P	F
6. Deflate the ET tube cuff.	P	F
7. Insert the stylet into the ET tube.	P	F

**REFERENCES:** None

**081-830-3016**

**INTUBATE A PATIENT**

**CONDITIONS**

You have an unconscious, nonbreathing casualty with no gag reflex. A qualified assistant is performing CPR. Suction equipment is available and ready for use. A laryngoscope and endotracheal (ET) tube have been prepared. You are not in an NBC environment. Necessary materials and equipment: bag-valve-mask (BVM) resuscitator or oxygen with demand valve, gloves, oral bite block or J tube, suction equipment, adhesive tape, benzoin, stethoscope, pressure manometer, and a 10 cc syringe.

**STANDARDS**

Complete all the steps necessary to establish an endotracheal tube airway in sequence and without causing further injury to the patient.

**TRAINING/EVALUATION**

*Training Information Outline*

**CAUTION**

Wear gloves to protect yourself against the transmission of contaminants whenever handling body fluids.

1. Put on gloves.
2. Oxygenate the patient with the bag-valve-mask for one minute.

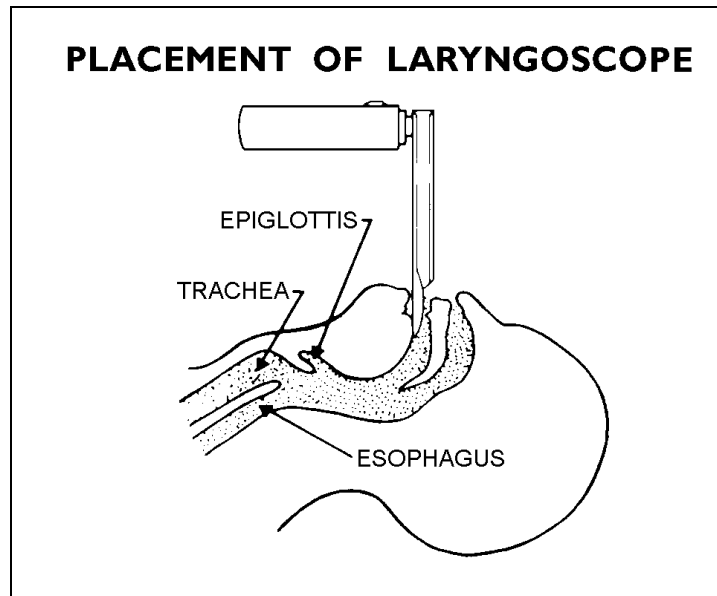
**CAUTION**

Do not deprive the patient of oxygen for longer than 20 seconds at any time during the procedure.

3. Position the patient's head by hyperextending the neck.
4. Open the patient's mouth and hold it open.



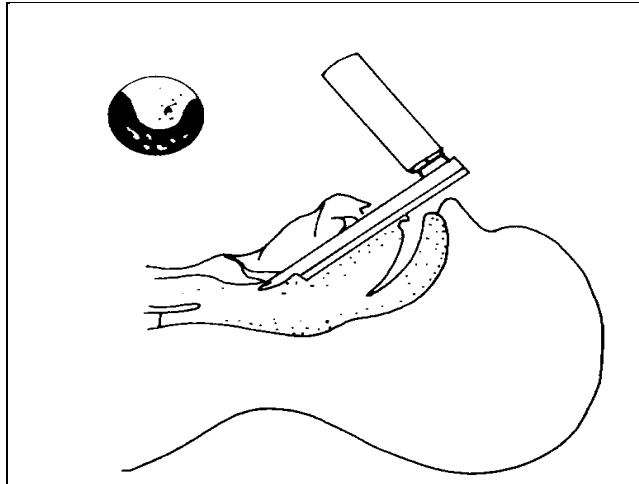
5. Insert the laryngoscope blade. (See Figure 3-52.)



**Figure 3-52**

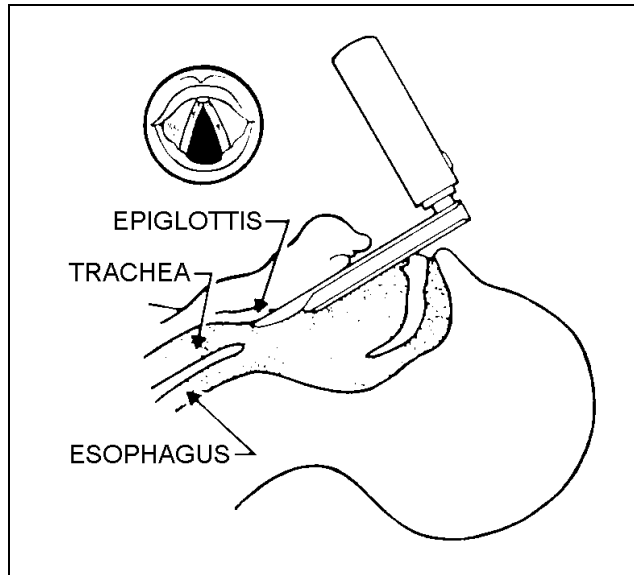
- a. Stand or kneel at the top of the patient's head.
- b. Hold the laryngoscope with your left hand.
- c. Open and lock the blade at a 90° angle to turn the light on.
- d. Place the blade into the right side of the patient's mouth.
- e. Move the laryngoscope to the center of the patient's mouth by moving the patient's tongue to the left side of his or her mouth with the laryngoscope blade.

- f. Advance the blade a short distance to observe the epiglottis. (See Figure 3-53.)



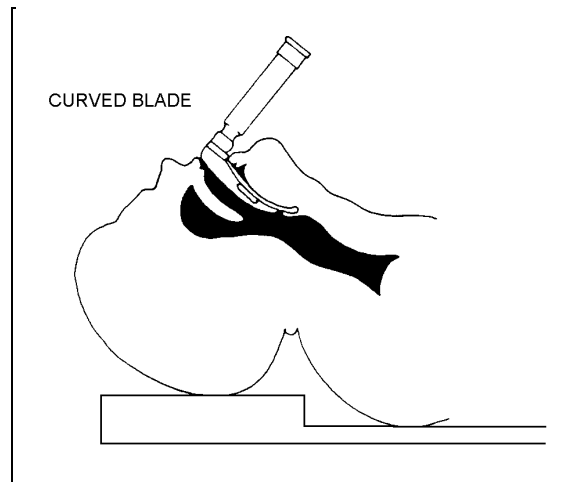
**Figure 3-53**

6. Retract the epiglottis and inspect the vocal cords. (See Figure 3-54.)



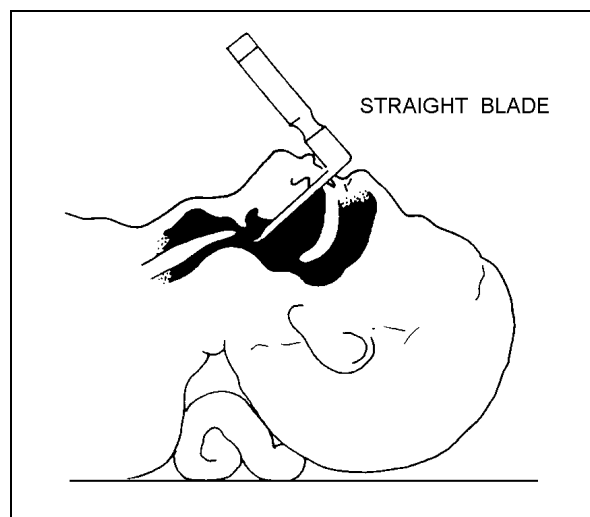
**Figure 3-54**

- a. When using a curved laryngoscope blade (McIntosh), apply anterior pressure to the vallecula with the tip of the laryngoscope blade to fold back the epiglottis and expose the vocal cords. (See Figure 3-55.)



**Figure 3-55**

- b. When using a straight laryngoscope blade (Miller), hook the blade tip under the epiglottis and pull up to fold back the epiglottis and expose the vocal cords. (See Figure 3-56.)

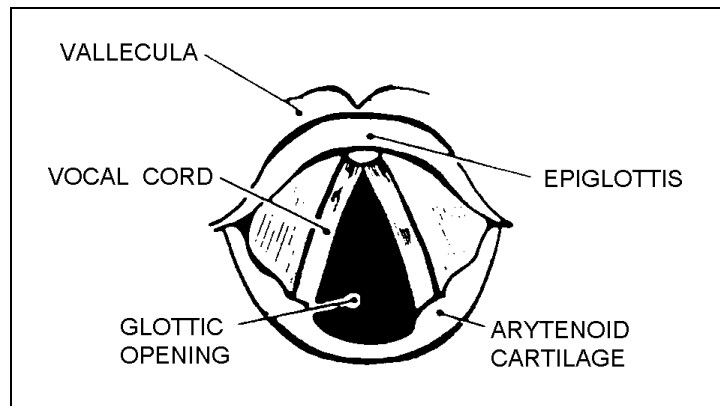


**Figure 3-56**

**WARNING**

Exert upward traction on the handle to expose the glottic opening. Never use the handle with a prying motion. Do not use the patient's teeth as a fulcrum.

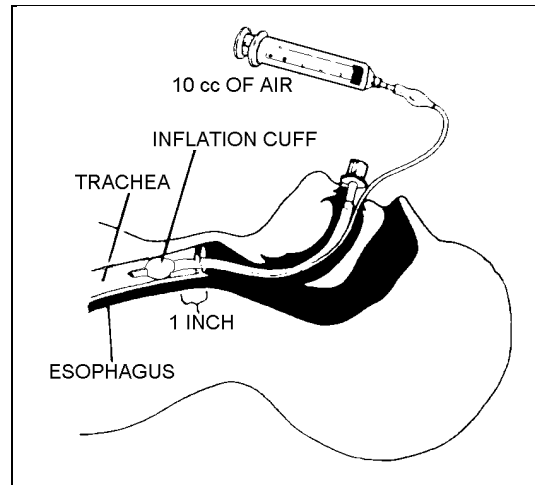
7. Insert the ET tube into the trachea.
  - a. Grasp the ET tube with your right hand.
  - b. Insert the ET tube and carefully guide the tip of the tube between the vocal cords until the cuff is just below the level of the vocal cords. (See Figure 3-57.)



**Figure 3-57**

8. Remove the laryngoscope.
9. Remove the stylet from the ET tube.
  - a. Hold the ET tube securely with your right hand.
  - b. Pull the stylet straight out with your left hand.

10. Inject the required amount of air to inflate the cuff (5 to 10 cc) by pressing the plunger of the syringe. (See Figure 3-58.)



**Figure 3-58**

11. Check placement of the ET tube.

a. Place the resuscitative equipment over the end of the ET tube and blow air into the tube to inflate the lungs.

b. Instruct an assistant to auscultate the patient's lung fields and epigastric area while you manually ventilate the patient through the ET tube.

(1) If the patient's chest rises and bilateral breath sounds are heard without any abnormal sounds heard over the epigastric area, proceed to step 12.

(2) If sound is heard over only one lung field, then you must partially deflate the cuff, withdraw the tube a little, reinflate the cuff, and listen again.

*NOTE:* A misplaced ET tube is most likely to be in the right main stem bronchus.

(3) If a rushing sound is heard over the epigastric area, withdraw the tube completely, reoxygenate the patient, and wait at least three minutes before repeating the procedure.

12. Check cuff pressure.

## STP 8-91B15-SM-TG

a. Use a pressure manometer.

(1) Connect a pressure manometer to the pilot balloon to ensure the cuff pressure is less than 25 cm H<sub>2</sub>O. Either inflate or deflate the pilot balloon to achieve the desired pressure.

(2) Remove the pressure manometer from the pilot balloon.

b. Use the minimal leak technique.

(1) Suction the patient thoroughly first.

(2) Attach and partially deflate the cuff using a 10 cc syringe.

(3) During the positive pressure ventilation, add air until only a slight leak is heard around the cuff during peak inspiration.

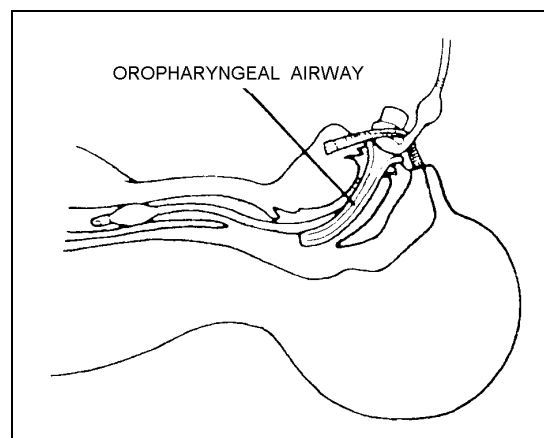
*NOTE:* Due to possible prolonged intubation, it is recommended that you use a tube with a high-volume/low pressure cuff to prevent possible necrosis at the cuff site. Using cuff pressures above 30 cm H<sub>2</sub>O may produce a decrease in capillary mucosal blood flow resulting in ischemia.

(4) Hold the cuff valve in one hand and simultaneously twist and pull the syringe with your other hand to remove the syringe.

13. Reoxygenate the patient.

14. Wedge a bite block or J tube between the back teeth to prevent biting of the ET tube which may cause partial or complete obstruction of the tube.

(See Figure 3-59.)



**Figure 3-59**

15. Secure the ET tube.
  - a. Wrap the middle of a long piece of tape around the ET tube.
  - b. Attach each end of the tape to the patient's face.

*NOTE:* Benzoin may be applied to the skin to prevent the tape from coming off.

16. Ventilate the patient once every five seconds.
17. Monitor the patient and ensure correct tube placement is maintained by auscultating the lungs and epigastric area.

*NOTE:* The tip of the tube should be 2 to 3 centimeters above the carina. Proper tube placement is confirmed by taking an x-ray of the patient's chest.

18. Record the procedure.

### ***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Put on sterile gloves.	P	F
2. Oxygenate the patient.	P	F
3. Position the patient's head.	P	F
4. Open the patient's mouth.	P	F
5. Insert the laryngoscope blade.	P	F
6. Retract the epiglottis and inspect the vocal cords.	P	F
7. Insert the ET tube into the trachea.	P	F
8. Remove the laryngoscope.	P	F
9. Remove the stylet from the ET tube.	P	F
10. Inflate the cuff.	P	F
11. Check the placement of the ET tube.	P	F
12. Check the cuff pressure.	P	F

## STP 8-91B15-SM-TG

### Performance Measures

### Results

13. Reoxygenate the patient.	P	F
14. Wedge a bite block or a J tube between the back teeth.	P	F
15. Secure the ET tube.	P	F
16. Ventilate the patient once every five seconds.	P	F
17. Monitor the patient.	P	F
18. Record the procedure.	P	F
19. Complete all necessary steps in order.	P	F

**REFERENCES:** None



081-830-3014

**EXTUBATE A PATIENT****CONDITIONS**

A patient is in the supine position with an endotracheal (ET) tube inserted through the mouth. You have performed a patient care handwash and have obtained the physician's order to remove the ET tube. Necessary materials and equipment: suctioning apparatus, emesis basin, 10 cc syringe, gloves, bag-valve-mask (BVM) resuscitator or oxygen with demand valve, and cardiac monitor.

**STANDARDS**

Complete all the steps necessary to remove the endotracheal tube without causing further injury to the patient. Removal of the tube (step 13) must take no longer than 20 seconds. Complete steps 1 through 14 in order.

**TRAINING/EVALUATION***Training Information Outline***CAUTIONS**

1. The patient's airway must be monitored throughout this procedure to prevent the patient from gagging on aspirated vomitus.
2. Oropharyngeal suctioning may be required at any time during this procedure if the patient vomits.

1. Read and verify the order on the consultation form.
2. Identify the patient by his or her arm band.
3. Explain the procedure to the patient.
4. Put on sterile gloves.
5. Monitor the patient's cardiac status.
6. Preoxygenate the patient for at least one minute.
7. Advance the suction catheter as far as possible with the suction off.
8. Apply intermittent suctioning while slowly withdrawing the catheter in a rotating fashion.

**CAUTION**

Do not apply suction for more than 10 to 15 seconds at one time.

*NOTE:* The mouth, pharynx, and the top of the endotracheal tube cuff should also be suctioned at this time. This will prevent any secretions that have pooled over the top of the cuff or in the mouth from going down the trachea once the cuff is deflated.

9. Reoxygenate the patient with two slow breaths.

10. Untape the ET tube from the patient's face while holding the ET tube in place.

*NOTE:* It is more comfortable for the patient if the tape is rolled away from the skin.

11. Deflate the ET tube cuff by attaching a 10 cc syringe to the cuff valve and pulling back on the plunger of the syringe as far as it will go.

**CAUTION**

If the cuff is only partially deflated while attempting to extubate the patient, the trauma could cause the patient's trachea to swell shut as well as cause permanent damage to the vocal cords.

12. Turn the patient's head to the side.

13. Remove the ET tube during exhalation.

a. Grasp the ET tube with the thumb and fingers of the dominant hand.

*NOTE:* If the patient vomits, hand the patient an emesis basin or place the basin under his or her chin to catch the vomitus. Have suction available, if needed.

b. Tell the patient to take a deep breath.

c. At the beginning of exhalation, pull the ET tube out without applying undue force, using a gradual continuous motion, until the tube is completely out of the patient's mouth.

*NOTE:* The removal of the ET tube from the trachea should take only 5 seconds, but it may take up to 20.

### CAUTIONS

1. If this step takes any longer than 20 seconds, the patient could be deprived of oxygen.
2. Remove the tube during exhalation to ensure that the patient does not inhale secretions back into the lungs.

14. Have the patient cough in order to assist in maintaining the patient's airway.

15. Start the patient on gas therapy.

*NOTE:* Reassure the patient that a slight irritation is normal and to talk only after the irritation has gone.

16. Dispose of used supplies and store the equipment.

17. Remove gloves and wash hands.

18. Record the procedure on the consultation form.

### *Evaluation Preparation*

*Setup:* For training and evaluation a mannequin must be used. Under no circumstances will this task be evaluated using another soldier as a simulated casualty. Prepare a written order for removal of an endotracheal tube.

*Brief soldier:* Tell the soldier to remove the ET tube.

### *Evaluation Guide*

#### Performance Measures

#### Results

- |  |   |   |
|--|---|---|
| 1. Read and verify orders.                           | P | F |
| 2. Identify the patient.                             | P | F |
| 3. Explain the procedure to the patient.             | P | F |
| 4. Put on sterile gloves.                            | P | F |
| 5. Monitor the patient's cardiac status.             | P | F |
| 6. Preoxygenate the patient for at least one minute. | P | F |

## STP 8-91B15-SM-TG

### Performance Measures

### Results

7. Advance the suction catheter.	P	F
8. Apply intermittent suction.	P	F
9. Reoxygenate the patient.	P	F
10. Untape the ET tube.	P	F
11. Deflate the ET tube cuff.	P	F
12. Turn the patient's head to the side.	P	F
13. Remove the ET tube during exhalation taking no longer than 20 seconds.	P	F
14. Have the patient cough to maintain the airway.	P	F
15. Complete steps 1 through 14 in order.	P	F
16. Start gas therapy.	P	F
17. Dispose of used supplies and store equipment.	P	F
18. Remove gloves and wash hands.	P	F
19. Record the procedure.	P	F

**REFERENCES:** None

081-833-3006

**PERFORM A NEEDLE CRICOTHYROIDOTOMY****CONDITIONS**

You are in a field environment. A casualty has a total upper airway obstruction. The casualty's airway cannot be opened using manual methods or an endotracheal (ET) tube. Necessary materials and equipment: blanket, poncho, two large bore needles (10 to 14 gauge), povidone-iodine, 5 to 10 cc syringe, cannula-over-needle device (optional), gloves, and tape.

**STANDARDS**

Establish an emergency airway without causing unnecessary injury to the casualty. Complete steps 3 through 8 in order.

**TRAINING/EVALUATION***Training Information Outline*

1. Hyperextend the casualty's neck.

**WARNING**

Do not hyperextend the casualty's neck if a cervical injury is suspected.

- a. Place the casualty in a supine position.
- b. Place a blanket or poncho rolled up under the casualty's neck or between the shoulder blades so the airway is straight.
2. Put on gloves, if available.
3. Locate the cricothyroid membrane.
  - a. Place a finger of the nondominant hand on the thyroid cartilage (Adam's apple) and slide the finger down to the cricoid cartilage.
  - b. Palpate for the "V" notch of the thyroid cartilage.
  - c. Slide the index finger down into the depression between the thyroid and cricoid cartilages.
  - d. Prep the casualty's neck with povidone-iodine. Clean a 3 to 4 inch area using a circular motion, starting from the center and working outward.

4. Stabilize the larynx.
  - a. Place the thumb and index finger of the nondominant hand on each side of the larynx.
  - b. Apply enough pressure to keep the larynx in place.

**WARNING**

Holding the larynx too long or too tightly could cause the larynx to spasm or swell.

5. Insert a large bore needle (10 to 14 gauge) into the cricothyroid membrane.
  - a. Hold the needle with the point directed 45° caudally.
  - b. Insert the needle through the cricothyroid membrane until no resistance is met.

**CAUTIONS**

1. This procedure is more risky on a casualty with a large thick neck or one who has a tendency to bleed readily.
2. If resistance is met after having passed through the cricothyroid membrane, the needle has punctured the other side of the tracheal cartilage.

c. Once the needle has penetrated the cricothyroid membrane, direct the needle inside the larynx downward and posteriorly to avoid penetration of the esophagus.

*NOTE:* This procedure may be varied by using a cannula-over-needle device. The catheter is advanced into the larynx.

6. Listen and feel for free airflow through the needle.
7. Insert a second needle, if necessary, and recheck for air flow. (If the airway formed by the first needle is not sufficient, a second needle may be inserted next to the first one following the procedure in step 5.)

*NOTE:* If air does not flow through the cricothyroidotomy needles, a surgical cricothyroidotomy must be performed. (See task 081-833-3005.) No more than two needles will be inserted.

8. Stabilize the needle(s).
  - a. Wrap a 6 to 8 inch strip of tape around the needles one time where they exit the skin.
  - b. Press the ends of the tape to the skin so they do not come off and so the needles are held in place.

*NOTE:* Adequate ventilation of the casualty cannot be maintained simply by establishing an airway through the use of a needle cricothyroidotomy. The plunger of a syringe may be removed and mouth to barrel ventilation may be used. If equipment is available, the casualty can be ventilated using an ambu bag or oxygen. Approximately 12 respirations per minute should be administered.

9. Keep the casualty's head immobilized.

*NOTE:* If an airway needs to be artificially maintained for a prolonged period of time, and endotracheal intubation is not possible, perform a surgical cricothyroidotomy or tracheostomy.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, use a mannequin or have another soldier act as the casualty. Under no circumstances will the needle be inserted in another soldier. Have the soldier demonstrate and explain what he or she would do.

*Brief soldier:* Tell the soldier to perform a needle cricothyroidotomy.

### ***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Hyperextend the casualty's neck.	P	F
2. Put on gloves, if available.	P	F
3. Locate the cricothyroid membrane.	P	F
4. Stabilize the larynx.	P	F
5. Insert a large bore needle into the cricothyroid membrane.	P	F
6. Listen and feel for free airflow through the needle.	P	F
7. Insert a second needle, if necessary and recheck for air flow. (If the airway formed by the first needle is not sufficient, a second needle may be inserted next to the first one following the procedure in step 5.)	P	F
8. Stabilize the needle(s).	P	F
9. Complete steps 3 through 8 in order.	P	F
10. Keep the casualty's head immobilized.	P	F

**REFERENCES:** None

**081-833-3005**

**PERFORM A SURGICAL CRICOTHYROIDOTOMY**

**CONDITIONS**

You are in a field environment. A casualty has an upper airway obstruction. The casualty's airway cannot be opened using manual methods or an endotracheal (ET) tube. A cricothyroidotomy needle is not available or performing a needle cricothyroidotomy is not effective. Necessary materials and equipment: cutting instrument (scalpel, knife blade, or tin can edge), suctioning apparatus, povidone-iodine, hemostats, needle holders, cannula (noncollapsible tube to maintain airway), knife handle, blanket, gloves, and tape.

**STANDARDS**

Establish an emergency airway without causing unnecessary injury to the casualty. Complete steps 3 through 10 in order.

**TRAINING/EVALUATION**

*Training Information Outline*

**CAUTION**

Consider only casualties with a total upper airway obstruction or casualties with inhalation burns for a surgical cricothyroidotomy.

1. Hyperextend the casualty's neck.

**WARNING**

Do not hyperextend the casualty's neck if a cervical injury is suspected.

- a. Place the casualty in the supine position.
  - b. Place a blanket or poncho rolled up under the casualty's neck or between the shoulder blades so the airway is straight.
2. Put on gloves, if available.
  3. Locate the cricothyroid membrane.



- a. Place a finger of the nondominant hand on the thyroid cartilage (Adam's apple) and slide the finger down to the cricoid cartilage.
  - b. Palpate for the "V" notch of the thyroid cartilage.
  - c. Slide the index finger down into the depression between the thyroid and cricoid cartilage.
  - d. Prep the skin over the membrane with povidone-iodine.
  - e. Raise the skin to form a tent-like appearance over the cricothyroid space, using the index finger and thumb.
4. With a cutting instrument in the dominant hand, make a 1 1/2 inch horizontal incision through the raised skin to the cricothyroid space.

**CAUTION**

Do not cut the cricothyroid membrane with this incision.

5. Relocate the cricothyroid space by touch and sight.
  6. Stabilize the larynx with one hand and make a 1/2 inch horizontal incision through the elastic tissue of the cricothyroid membrane.
  7. Insert a dilator (hemostat or needle holder) through the opening.
  8. Separate the blades of the dilator to make a larger opening.
- NOTE:* A rush of air may be felt through the opening.
9. Insert the end of a cannula (or improvised substitute) between the blades of the dilator. The cannula should be in the trachea and directed toward the lungs.
  10. Secure the cannula in place to reduce movement in the opening and to prevent inhalation of the cannula.
- NOTE:* Reflex coughing may be stimulated by the insertion of the cannula. This may aid in clearing the airway but necessitates proper securing of the cannula.
11. Suction the casualty's airway, as necessary.
    - a. Insert the suction catheter 4 to 5 inches into the cannula.
    - b. Apply suction only while withdrawing the catheter.

## STP 8-91B15-SM-TG

- c. Administer 1 cc of saline solution into the airway to loosen secretions and help facilitate suctioning.

*NOTE:* Allow the casualty to take several breaths between suctionings.

12. Administer oxygen, as necessary.

*NOTE:* Mouth-to-cannula resuscitation may be performed if needed.

13. Apply a sterile dressing under the casualty's cannula by making a V-shaped fold in a 4 X 4 gauze pad and placing it under the edge of the cannula to prevent irritation to the casualty.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, use a mannequin or have another soldier act as the casualty. Under no circumstances will the skin be incised. Have the soldier demonstrate and explain what he or she would do.

*Brief soldier:* Tell the soldier to perform a surgical cricothyroidotomy.

### ***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Hyperextend the casualty's neck.	P	F
2. Put on gloves, if available.	P	F
3. Locate the cricothyroid membrane.	P	F
4. With a cutting instrument in the dominant hand, make a 1 1/2 inch horizontal incision through the raised skin to the cricothyroid space.	P	F
5. Relocate the cricothyroid space by touch and sight.	P	F
6. Stabilize the larynx with one hand and make a 1/2 inch horizontal incision through the elastic tissue of the cricothyroid membrane.	P	F
7. Insert a dilator (hemostat or needle holder) through the opening.	P	F
8. Separate the blades of the dilator to make a larger opening.	P	F
9. Insert the end of a cannula (or improvised substitute) between the blades of the dilator.	P	F
10. Secure the cannula in place.	P	F
11. Complete steps 3 through 10 in order.	P	F

**Performance Measures**

**Results**

12. Suction the casualty's airway, as necessary.

P F

13. Administer oxygen, as necessary.

P F

14. Apply a sterile dressing under the casualty's cannula.

P F

**REFERENCES:** None

**081-833-3007**

**PERFORM NEEDLE CHEST DECOMPRESSION**

**CONDITIONS**

You have a conscious, breathing casualty with chest trauma who requires needle chest decompression. Necessary materials and equipment: stethoscope, large bore needle (10 to 14 gauge), 35 to 60 cc Luer-Lock syringe with 3-way stopcock, povidone-iodine swab, sterile gloves, and Field Medical Card.

**STANDARDS**

Complete all the steps necessary to perform a needle chest decompression in order without causing unnecessary injury to the casualty.

**TRAINING/EVALUATION**

*Training Information Outline*

*NOTE:* Pneumothorax is defined as the presence of air within the pleural space. Air may enter the pleural cavity either from the lungs through a rupture or laceration or from the outside through a sucking chest wound. Trapped air in the pleural space compresses the lung beneath it. Unrelieved pressure will push the contents of the mediastinum in the opposite direction, away from the side of the tension pneumothorax. This, in turn, will compromise venous return to the heart and interfere with respiration.

1. Verify the presence of tension pneumothorax by checking for indications of the condition.

**WARNING**

Correct assessment is essential. Insertion of a needle into the pleural space of a nonaffected person will result in pneumothorax.

- a. Question a conscious casualty about difficulty in breathing, pain on the affected side, or coughing up blood.
- b. Observe a bared anterior chest and upper abdomen for respiratory rate and depth.
- c. Look for mediastinal shift manifested as a tracheal deviation and/or jugular distension.
- d. Look and listen for gasping for air (dyspnea) and progressive respiratory distress.

*NOTE:* Dyspnea may be, but is not always, an indication of pneumothorax.

- e. Look at and feel the patient's chest for signs of subcutaneous emphysema.

- f. Check for lack of chest excursion.
    - (1) Observe the rising and falling of the chest on respiration.
    - (2) Compare chest excursion bilaterally.
  - g. Look for unilateral distension.
    - (1) Place one hand on the affected side.
    - (2) Place the other hand on the unaffected side.
    - (3) Observe the height of each hand.
    - (4) Determine if the height of the hand on the affected side is greater during expiration than the height of the hand on the unaffected side.
  - h. Use a stethoscope to listen to breath sounds.
    - (1) Compare the sides for equality.
    - (2) Auscultate both sides of the chest.
    - (3) If breath sounds are unequal, percuss both sides to determine the difference in tone.
- NOTE:* Breath sounds will be diminished or absent on the affected side.
- i. Check for progressive distension of the abdomen that is not relieved by gastric aspiration and endotracheal intubation.
  - j. Look for deep cyanosis.
  - k. Look for signs and symptoms of shock.
2. Locate the insertion site.
- a. Locate the sternomanubrial junction (Angle of Louis).
  - b. From the sternomanubrial joint, follow the adjacent intercostal space to the midclavicular line.

*NOTE:* The preferred entry site is the space between the second and third ribs approximately in line with the nipple on the affected side of the patient's chest.

## STP 8-91B15-SM-TG

3. Thoroughly cleanse a 3 to 4 inch area around the insertion site. Begin in the center and work outward using a circular motion.

4. Insert a large bore (10 to 14 gauge) needle with attached syringe.

a. Place the needle tip, bevel up, on the insertion site, centered over the third rib.

b. Lower the proximal end of the needle to permit the tip to enter the skin just above the third rib margin.

c. Firmly insert the needle into the skin over the third rib, until the pleura has been penetrated, as evidenced by feeling a "pop" as the needle enters the pleural space.

### WARNING

Proper positioning of the needle is essential to avoid puncturing blood vessels and/or nerves.

5. Decompress the affected side by aspirating as much air as is necessary to relieve the patient's acute symptoms.

*NOTE:* If you are using a catheter-over-needle, hold the needle still and push the catheter into the plural space until resistance is felt. Withdraw the needle along the angle of insertion while holding the catheter still.

*NOTE:* If you are using a three-way stopcock, additional air can be aspirated from the plural cavity by turning the stopcock lever to allow expulsion of the air from the syringe.

6. Initiate closed chest drainage with underwater seal, if available. Proceed to step 7 if improvisation is required.

7. If an underwater seal drainage is not available, use a commercial one-way flutter valve or improvise one.

a. Cut a finger casing from a sterile glove.

b. Cut off the finger tip.

c. Tie or tape the finger casing to the needle hub.

d. Check the operation of the improvised flutter valve.

(1) Ensure that air passes through the needle-valve assembly and improvised flutter valve on expiration.

- (2) Ensure that the flutter valve collapses against itself on inspiration.

*NOTE:* This will prevent air from entering the pleural cavity.

8. Secure the needle or catheter to the chest.
9. Record the treatment on the Field Medical Card.

### ***Evaluation Preparation***

*Setup:* For training and evaluation, use a mannequin or have another soldier act as the casualty. Under no circumstances will the needle be inserted. Have the soldier demonstrate and explain what he or she would do.

*Brief soldier:* Tell the soldier to perform needle chest decompression.

### ***Evaluation Guide***

#### **Performance Measures**

#### **Results**

- |   |   |   |
|---|---|---|
| 1. Verify the presence of tension pneumothorax.             | P | F |
| 2. Locate the insertion site.                               | P | F |
| 3. Thoroughly clean the area.                               | P | F |
| 4. Insert a large bore needle.                              | P | F |
| 5. Decompress the affected chest.                           | P | F |
| 6. Initiate closed chest drainage or apply a flutter valve. | P | F |
| 7. Secure the needle or catheter to the chest.              | P | F |
| 8. Record the treatment on the Field Medical Card.          | P | F |
| 9. Complete all steps in order.                             | P | F |

**REFERENCES:** None

**081-833-3010**

**INSERT AN ESOPHAGEAL GASTRIC TUBE AIRWAY (EGTA)/  
ESOPHAGEAL OBTURATOR AIRWAY (EOA)**

**CONDITIONS**

An unconscious, nonbreathing casualty requires the insertion of an esophageal gastric tube airway (EGTA) or esophageal obturator airway (EOA). An assistant is performing resuscitative measures. Necessary materials and equipment: EGTA/EOA tube, 50 cc syringe, gloves, EGTA/EOA mask, water soluble lubricant jelly, gauze, suctioning equipment, large bore needle, stethoscope, and bag-valve-mask (BVM) or demand valve with oxygen.

**STANDARDS**

Complete all the steps necessary to insert an EGTA or EOA in order. Perform the actual insertion of the tube and check for proper positioning (steps 9 through 11) within 20 seconds.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Inflate the face mask balloon.
  - a. Attach an air filled syringe to the valve on the chin end of the mask.
  - b. Inflate the mask balloon by depressing the syringe plunger.

**CAUTION**

The balloon should not be so taut that a depression cannot be made by the fingers. An overinflated balloon will not conform to the curvature of the patient's face and will allow air to leak from under the mask.

- c. Remove the syringe when the inflated pressure is correct.
2. Test the cuff balloon for leaks.
  - a. Insert the syringe into the balloon inflation tube valve.
  - b. Fill the balloon with air until the indicator balloon is filled and remove the syringe.
  - c. Feel for air leaks.



*NOTE:* If a leak is present, replace the tube.

- d. Deflate the balloon by inserting the syringe into the balloon inflation tube valve and withdrawing the air. Leave the syringe attached to the balloon inflation tube.
3. Attach the tube to the mask by inserting the hard plastic connector end of the tube into the outlet closest to the chin, on the balloon side of the mask, until the tube "clicks" into place.
4. Perform a patient care handwash.
5. Put on gloves.

**WARNING**

Wear gloves for self-protection against transmission of contaminants whenever you are handling body fluids.

6. Lubricate the tube.
  - a. Squeeze the lubricant onto a clean piece of sterile gauze.
  - b. Apply the lubricant to the tube from the tip to above the cuff.
7. Oxygenate the casualty.
  - a. Instruct the assistant to oxygenate the casualty by giving two breaths.
  - b. Instruct the assistant to count aloud for 20 seconds while intubation is performed.
  - c. At the end of 20 seconds, the assistant should immediately resume resuscitation if intubation is not completed.
8. Kneel just above the casualty's head and face the casualty's feet.

*NOTE:* If the casualty's neck has been hyperextended to open the airway, return the head to a neutral position to avoid intubating the trachea.

**WARNING**

Complete steps 9 through 11 in less than 20 seconds because prolonged oxygen deprivation results in irreversible brain damage and possible death.

## STP 8-91B15-SM-TG

a. Hold the casualty's tongue with the thumb and grasp the chin and mandible with the forefinger and middle finger of the left hand. Lift up and forward without hyperextending the neck.

*NOTE:* If blood has obstructed the airway, suction the blood to obtain a clear view of the oral cavity and throat before inserting the tube.

b. Insert the tube down the back of the throat, using your right hand, until the mask settles on the casualty's face.

### CAUTION

Do not force the tube at any time. The tube should slide easily without exerting pressure.

10. Seal the mask to the casualty's face.

a. Place the forefingers of both hands over the chin side of the mask.

b. Put the thumbs of both hands around the nose area outside the mask.

c. Use the remaining three fingers of each hand to curve around each side of the casualty's mandible and pull the casualty's face against the face mask to form an airtight seal.

11. Blow a full breath of air into the opening on the mask that is closest to the casualty's nose.

12. Check for air in the lungs and the paraumbilical region.

a. Direct the assistant to place the stethoscope on the casualty's right chest area and listen for air going into the right lower lung.

(1) Seal the mask to the casualty's face.

(2) Blow into the mask opening.

b. Direct the assistant to place the stethoscope on the casualty's left chest area and listen for air going into the left lower lung.

(1) Seal the mask to the casualty's face.

(2) Blow into the mask opening.

*NOTE:* If the EOA is in the esophagus, breath sounds should be heard over both lung fields. If the EOA has been placed in the trachea, no breath sounds will be heard over the lung fields. If there is uncertainty about the position of the tube, remove it, ventilate the casualty, and emplace the EOA properly.

13. Inflate the cuff by adding air until the indicator balloon is taut to the touch.

**WARNINGS**

1. Do not add more than 35 cc of air because the balloon may burst.
2. Do not inflate the cuff until the tube has been properly placed.

14. Remove the syringe to allow self-sealing (clamp the cuff tube, if necessary).

15. Ventilate the casualty once every three to five seconds by giving the casualty breaths with the bag-valve-mask (BVM) or demand valve with oxygen.

*NOTE:* Hold the mask firmly against the casualty's face to ensure that the EOA tube remains properly positioned.

16. If the casualty regains consciousness and/or begins breathing on his or her own and regains gag reflexes, remove the EGTA/EOA tube.

- a. Oxygenate the casualty with two slow breaths.
- b. Pop off the face mask.
- c. Turn the casualty to one side.
- d. Deflate the balloon cuff with the syringe.
- e. Withdraw the tube following the curve of the pharynx.
- f. Immediately clear the casualty's airway of vomitus.

*NOTE:* A suctioning machine should always be available prior to removing an EGTA/EOA.

***Evaluation Preparation***

*Setup:* This task will be evaluated using a mannequin. Under no circumstances will this task be evaluated using another soldier as a simulated casualty.

*Brief soldier:* Tell the soldier to insert an EGTA or EOA.

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Inflate the face mask balloon.	P	F
2. Test the balloon cuff for leaks.	P	F
3. Attach the tube to the mask.	P	F
4. Perform a patient care handwash.	P	F
5. Put on gloves.	P	F
6. Lubricate the tube.	P	F
7. Oxygenate the casualty.	P	F
8. Kneel above the casualty's head facing the casualty's feet.	P	F
9. Insert the tube into the casualty's esophagus.	P	F
10. Seal the mask to the casualty's face.	P	F
11. Blow a full breath of air into the mask.	P	F
12. Check for air in the lungs and paraumbilical region.	P	F
13. Inflate the cuff.	P	F
14. Remove the syringe.	P	F
15. Ventilate the casualty.	P	F
16. Remove the EGTA/EOA tube, if necessary.	P	F
17. Complete steps 9 through 11 within 20 seconds.	P	F

**REFERENCES:** None

081-833-3027

**MANAGE CARDIAC ARREST****CONDITIONS**

A patient attached to a cardiac monitoring device is in ventricular fibrillation or pulseless ventricular tachycardia and is receiving cardiac life support. Necessary materials and equipment: cardiac monitor, defibrillator, and electrode paste.

**STANDARDS**

Complete all the steps necessary to perform cardiac defibrillation in order.

**TRAINING/EVALUATION***Training Information Outline*

1. Prepare the defibrillator.
  - a. Ensure the synchronizer switch is in the OFF position.
  - b. Apply conductive material to the paddles evenly by squeezing electrode paste on the working face of one paddle and rubbing the working face of both paddles together.

**WARNING**

Do not use alcohol or alcohol pads as they may ignite into flame.

- c. Turn the main power switch button to the ON position.
  - d. Turn the energy level switch dial to 200 joules for the average size adult.
2. Depress the "charge" button(s) on the paddles or defibrillator to charge the paddles.
3. Place the paddles firmly on the patient's chest.
  - a. Place the negative (sternum) paddle to the right of the upper sternum and below the right clavicle.
  - b. Place the positive (apex) paddle below the area of the left nipple along the midaxillary line.
  - c. Apply downward pressure (approximately 25 pounds of pressure) to each paddle.

**WARNING**

Poor contact with the patient's skin will decrease the effectiveness of the defibrillation and cause the patient to get burned when the machine is charged.

4. Clear all personnel from contact with the patient.
  - a. Give the order, "ALL CLEAR."
  - b. Visually check to ensure that no one is in contact with the patient.
  - c. Visually check to ensure no one is in direct contact with any electrically conductive material touching the patient, such as IV lines, monitor wires, or the bed frame.
5. Deliver defibrillation to the patient.
  - a. Depress the discharge button on both paddles simultaneously.
  - b. Release both discharge buttons after delivering the shock.
  - c. Remove the paddles from the patient's chest.
6. Evaluate the effect of the defibrillation.

*NOTE:* Steps 6a and 6b are done simultaneously.

- a. Evaluate the rhythm on the monitor.
  - b. Check the patient's carotid pulse.
  - c. Proceed to step 7 if the patient does not have a pulse.
  - d. Proceed to step 8 if the patient has a pulse.
7. Treat the pulseless patient as appropriate for the rhythm present.
  - a. Monitor shows asystole--check the rhythm in another lead to confirm. If asystole is confirmed, continue CPR and treat IAW protocols/MD directives.
  - b. Monitor shows an organized rhythm (a sinus rhythm or atrial fibrillation, for example). The patient is in electromechanical disassociation (EMD) when the monitor shows an organized rhythm but the patient remains pulseless. Continue CPR and treat cause of EMD IAW protocols/MD directives.

c. Monitor shows ventricular fibrillation or ventricular tachycardia--repeat steps 1c through 5c to defibrillate the patient, making the following voltage adjustments:

- (1) Raise the energy level to 250 to 300 for the second shock.
- (2) Raise the energy level to 360 for subsequent shocks.

*NOTE:* After the third shock, ACLS should be instituted IAW protocols/MD directives.

**CAUTION**

Perform CPR between shocks while the defibrillator is being charged.

8. Monitor the patient, checking vital signs and providing supportive care as appropriate for rhythm.

***Evaluation Guide***

**Performance Measures**

**Results**

1. Prepare the defibrillator.	P	F
2. Depress the "charge" button(s) on the paddles or defibrillator to charge the paddles.	P	F
3. Place the paddles firmly on the patient's chest.	P	F
4. Clear all personnel from contact with the patient.	P	F
5. Deliver defibrillation to the patient.	P	F
6. Evaluate the effect of the defibrillation.	P	F
7. Treat the pulseless patient as appropriate for the rhythm present.	P	F
8. Monitor the patient, checking vital signs and providing supportive care as appropriate for rhythm.	P	F
9. Perform all necessary steps in order.	P	F

**REFERENCES:** None

**081-835-3001**

**ADMINISTER ORAL MEDICATIONS**

**CONDITIONS**

A patient care handwash has been performed. Necessary materials and equipment: calibrated medicine cups, disposable medicine cups, tray, medications, DA Form 3949, and the patient's clinical record.

**STANDARDS**

Prepare and administer medications IAW the physician's orders. Observe the "five rights" (the right drug, the right dose, the right patient, the right route, and the right time).

**TRAINING/EVALUATION**

*Training Information Outline*

1. Check the medication sheet (DA Form 4678) against the physician's orders. (Abbreviations commonly used in prescribing medications can be found in [Appendix A.](#))
  - a. Name of the medication.
  - b. Amount (dose) of medication.
  - c. Route of administration.
  - d. Time to be administered.
2. Select the medication.
  - a. Check the medication label three times to ensure that the correct medication is being prepared for administration.
    - (1) First time--when removing the container from the storage shelf.
    - (2) Second time--when preparing the medication dose.
    - (3) Third time--when returning the container to the storage shelf.
  - b. Check the expiration date of the medication.
  - c. Handle only one medication at a time.



*NOTE:* If unfamiliar with a medication, look it up to determine contraindications, precautions, and side effects before preparing it for administration.

3. Calculate the amount of medication required to equal the prescribed dose. (See Appendix A.)
4. Prepare the prescribed dose of medication.
  - a. Tablets or capsules. Transfer the prescribed dose of tablets or capsules to the medicine cup.
  - b. Liquids.
    - (1) Pour the prescribed dose of liquid medication into the medicine cup.

*NOTE:* When liquid is poured into a cylinder, it forms a meniscus. In determining the volume of liquid, a reading must be made at the bottom of the meniscus, with the level of the liquid at eye level.

- (2) Small amounts of liquid medication should be drawn up in a syringe.
  - c. Powders.
    - (1) Pour the correct dose of powdered or granulated medication into the medicine cup.
    - (2) Pour the required amount of water or juice into a paper cup.

*NOTE:* Reconstitute the medication at the patient's bedside.

5. Place all the prepared medications on a tray or the medication cart.

*NOTE:* When preparing medication for more than one patient, mark each container with the patient's identification.

6. Sign for controlled drugs on DA Form 3949, IAW local SOP.
7. Correctly identify the patient.
8. Locate the correct medication.
9. Give the medication to the patient at the prescribed time.
  - a. Tablets, capsules, or liquids. Observe the patient swallow the tablets, capsules, or liquids.
  - b. Sublingual medications. Instruct the patient to allow sublingual medications to dissolve in the mouth.

## STP 8-91B15-SM-TG

c. Powdered medication. Reconstitute powdered or granulated medications in the prepared juice or water and observe the patient drink the preparation.

### CAUTION

Do not leave any medications at the patient's bedside without a specific physician's order to do so.

*NOTE:* If a patient refuses a medication, offer it again in five minutes. If refused a second time, record the omission on DA Form 4678 and document the reason for the omission in the nursing notes.

10. Record the administration of all medications on the appropriate medical forms.

*NOTE:* Administration of all scheduled and nonscheduled (PRN) medication must be documented.

a. Initial the medication sheet (DA Form 4678).

b. Annotate the nursing notes when administering controlled drugs, nonscheduled (PRN) medications, and other medications as required by local policy.

(1) Name of the medication.

(2) Time the medication was administered.

(3) Reason for the medication.

11. Record the omission of a medication on the appropriate medical forms whenever a scheduled medication is not administered.

a. Annotate the medication sheet (DA Form 4678) by placing a circle in the initial block.

b. Annotate the nursing notes.

(1) Name of the medication.

(2) Time it should have been administered.

(3) Reason it was not administered.

(4) Follow-up action taken.

*Evaluation Guide*

<b>Performance Measures</b>	<b>Results</b>	
1. Check the medication sheet (DA Form 4678) against the physician's orders.	P	F
2. Select the medication.	P	F
3. Calculate the amount of medication required to equal the prescribed dose.	P	F
4. Prepare the prescribed dose of medication.	P	F
5. Place all the prepared medications on a tray or the medication cart.	P	F
6. Sign for controlled drugs on DA Form 3949, IAW local SOP.	P	F
7. Correctly identify the patient.	P	F
8. Locate the correct medication.	P	F
9. Give the medication to the patient at the prescribed time.	P	F
10. Record the administration of all medications on the appropriate medical forms.	P	F
11. Record the omission of a medication on the appropriate medical forms whenever a scheduled medication is not administered.	P	F

**REFERENCES:***Required**Related*

FM 8-230

**081-835-3020**

## **ADMINISTER TOPICAL MEDICATIONS**

### **CONDITIONS**

A patient care handwash has been performed. Necessary materials and equipment: calibrated medicine cups, disposable medicine cups, tray, medications, medicated pads or patches, application papers, tape, DA Form 3949, and the patient's clinical record.

### **STANDARDS**

Prepare and administer medications IAW the physician's orders. Observe the "five rights" (the right drug, the right dose, the right patient, the right route, and the right time).

### **TRAINING/EVALUATION**

#### *Training Information Outline*

1. Check the medication sheet (DA Form 4678) against the physician's orders. (Abbreviations commonly used in prescribing medications can be found in [Appendix A.](#))

- a. Name of the medication.
- b. Amount (dose) of medication.
- c. Route of administration.
- d. Time to be administered.

2. Select the medication.

a. Check the medication label three times to ensure that the correct medication is being prepared for administration.

- b. Check the expiration date of the medication.
- c. Handle only one medication at a time.

*NOTE:* If unfamiliar with a medication, look it up to determine contraindications, precautions, and side effects.

3. Prepare the prescribed dose of topical medication.

*NOTE:* Perform pharmaceutical calculations as necessary to determine the amount of medication required to equal the prescribed dose. (See Appendix A.)

- a. Obtain single dose packets of topical medication.
  - b. Obtain the required number of medicated patches or pads.
  - c. Apply the prescribed size ribbon of ointment to an application paper.
  - d. Obtain the jar or tube of medication identified for that individual patient's use.
  - e. Aseptically transfer the required amount of topical medication from the bulk storage container to a sterile, disposable container.
4. Place all the prepared medications on a tray or the medication cart.

*NOTE:* When preparing medication for more than one patient, mark the prepared medications with the patient's identification.

5. Sign for controlled drugs on DA Form 3949, as appropriate.
6. Correctly identify the patient.
7. Prepare the skin.
  - a. Provide privacy or screen the patient, as necessary.
  - b. Expose the prescribed area of the patient's skin.
  - c. Clean the skin IAW the physician's orders, if required.
8. Apply the medication to the patient.
  - a. Locate the correct medication.
  - b. Apply the medication to the prescribed area IAW the physician's orders or local SOP.

*NOTE:* Wear gloves when appropriate.

- (1) Secure patches, pads, and application papers with tape.
- (2) Cover topical applications with sterile dressings IAW the physician's orders, if required.

**CAUTION**

Do not leave any medication at the patient's bedside without a specific physician's order to do so.

*NOTE:* If a patient refuses the application of a medication, offer it again in five minutes. If refused a second time, record the omission on DA Form 4678 and document the reason for the omission in the nursing notes.

9. Record the administration of all medications on the appropriate medical forms.

*NOTE:* Administration of all scheduled and nonscheduled (PRN) medication must be documented.

- a. Initial the medication sheet (DA Form 4678).
- b. Make a nursing note entry describing the location of the application and the condition of the skin at the time of application.
- c. Annotate the nursing notes when administering controlled drugs, nonscheduled (PRN) medications, and other medications as required by local policy.

- (1) Name of the medication.
- (2) Time the medication was administered.
- (3) Reason for the medication.

10. Record the omission of a medication on the appropriate medical forms whenever a scheduled medication is not administered.

- a. Annotate the medication sheet (DA Form 4678) by placing a circle in the initial block.
- b. Annotate the nursing notes.
  - (1) Name of the medication.
  - (2) Time it should have been administered.
  - (3) Reason it was not administered.
  - (4) Follow-up action taken.

*Evaluation Guide*

<b>Performance Measures</b>	<b>Results</b>	
1. Check the medication sheet (DA Form 4678) against the physician's orders.	P	F
2. Select the medication.	P	F
3. Prepare the prescribed dose of topical medication.	P	F
4. Place all the prepared medications on a tray or the medication cart.	P	F
5. Sign for controlled drugs on DA Form 3949, as appropriate.	P	F
6. Correctly identify the patient.	P	F
7. Prepare the skin.	P	F
8. Apply the medication to the patient.	P	F
9. Record the administration of all medications on the appropriate medical forms.	P	F
10. Record the omission of a medication on the appropriate medical forms whenever a scheduled medication is not administered.	P	F

**REFERENCES:***Required**Related*

FM 8-230

**081-835-3021**

**ADMINISTER RECTAL OR VAGINAL MEDICATIONS**

**CONDITIONS**

A patient care handwash has been performed. Necessary materials and equipment: disposable medicine cups, tray, medications, applicators, nonsterile gloves, water-soluble jelly, DA Form 3949, and the patient's clinical record.

**STANDARDS**

Prepare and administer medications IAW the physician's orders. Observe the "five rights" (the right drug, the right dose, the right patient, the right route, and the right time).

**TRAINING/EVALUATION**

*Training Information Outline*

1. Check the medication sheet (DA Form 4678) against the physician's orders. (Abbreviations commonly used in prescribing medications can be found in [Appendix A.](#))

- a. Name of the medication.
- b. Amount (dose) of medication.
- c. Route of administration.
- d. Time to be administered.

2. Select the medication.

a. Check the medication label three times to ensure that the correct medication is being prepared for administration.

- b. Check the expiration date of the medication.
- c. Handle only one medication at a time.

*NOTE:* If unfamiliar with a medication, look it up to determine contraindications, precautions, and side effects.

3. Prepare the prescribed dose of medication.



*NOTE:* Perform pharmaceutical calculations as necessary to determine the amount of medication required to equal the prescribed dose. (See Appendix A.)

- a. Place the suppository medication in the medication cup.
- b. Draw the correct dose of cream or foam medication into the applicator device.
- c. Prepare the prescribed amount of medicated solution for a vaginal irrigation (douche) or an enema.
- d. Obtain the prescribed single use, disposable douche or enema.

*NOTE:* Leave medication wrapped or covered until ready to administer.

4. Place all the prepared medications on a tray or the medication cart.

*NOTE:* When preparing medication for more than one patient, mark each cup or applicator with the patient's identification.

5. Sign for controlled drugs on DA Form 3949, as appropriate.
6. Correctly identify the patient.
7. Provide for privacy.
8. Position the patient, as appropriate.
  - a. Supine, with the legs spread and bent at the knees, for vaginal administration.
  - b. Lateral, with the upper leg bent at the knee to facilitate spread of the buttocks, for rectal administration.
9. Put on exam gloves.
10. Insert the medication.
  - a. Suppositories.
    - (1) Lubricate the suppository with water-soluble jelly.
    - (2) Insert the suppository into the appropriate orifice and advance it with the index finger.

*NOTE:* Rectal suppositories must be advanced past the sphincter muscles (about 2 inches).

- b. Cream or foam applications.

## STP 8-91B15-SM-TG

- (1) Lubricate the tip of the applicator device with water-soluble jelly.
- (2) Insert the applicator into the appropriate orifice.
- (3) Push the applicator plunger to instill the medication.
- (4) Withdraw the applicator.

c. Vaginal irrigation (douche).

*NOTE:* Place a catch basin or bedpan under the patient to collect return solution.

- (1) Lubricate the douche tip with water-soluble jelly.
- (2) Gently insert the douche tip into the vagina.
- (3) Release the clamp on the tubing and allow solution to flow slowly. (If using a disposable douche, gently squeeze the container to dispense the solution.)
- (4) Rotate the douche tip to direct fluid over all parts of the vagina.
- (5) Administer all the solution and gently withdraw the douche tip.
- (6) Remove the bedpan or catch basin and place a sanitary pad over the vulva.

d. Enema.

*NOTE:* Provide a bedpan if the patient is unable to ambulate to the latrine to expel the solution.

- (1) Lubricate the rectal tip with water-soluble jelly.
- (2) Insert the rectal tip into the rectum about three to four inches.
- (3) Release the clamp on the tubing and allow the solution to flow slowly. (If using a disposable enema, squeeze the container to dispense the solution.)
- (4) Slow the flow of solution if the patient complains of cramping.
- (5) Administer all the solution and withdraw the enema tip.
- (6) Tell the patient how long the solution must be retained.

**CAUTION**

Do not leave any medication at the patient's bedside without a specific physician's order.

*NOTE:* If a patient refuses the instillation of a medication, offer it again in five minutes. If refused a second time, record the omission on DA Form 4678 and document the reason for the omission in the nursing notes.

11. Record the administration of all medications on the appropriate medical forms.

*NOTE:* Document the administration of all scheduled and nonscheduled (PRN) medication.

- a. Initial the medication sheet (DA Form 4678).
- b. Annotate the nursing notes when administering controlled drugs, nonscheduled (PRN) medications, and other medications as required by local policy.

- (1) Name of the medication.
- (2) Time the medication was administered.
- (3) Reason for the medication.

12. Record the omission of a medication on the appropriate medical forms whenever a scheduled medication is not administered.

- a. Annotate the medication sheet (DA Form 4678) by placing a circle in the initial block.
- b. Annotate the nursing notes.
  - (1) Name of the medication.
  - (2) Time it should have been administered.
  - (3) Reason it was not administered.
  - (4) Follow-up action taken.

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Check the medication sheet (DA Form 4678) against the physician's orders.	P	F
2. Select the medication.	P	F
3. Prepare the prescribed dose of medication.	P	F
4. Place all the prepared medications on a tray or the medication cart.	P	F
5. Sign for controlled drugs on DA Form 3949, as appropriate.	P	F
6. Correctly identify the patient.	P	F
7. Provide for privacy.	P	F
8. Position the patient, as appropriate.	P	F
9. Put on exam gloves.	P	F
10. Insert the medication.	P	F
11. Record the administration of all medications on the appropriate medical forms.	P	F
12. Record the omission of a medication on the appropriate medical forms whenever a scheduled medication is not administered.	P	F

**REFERENCES:**

***Required***

***Related***

FM 8-230

081-835-3022

**ADMINISTER MEDICATED EYE DROPS OR OINTMENTS****CONDITIONS**

A patient care handwash has been performed. Necessary materials and equipment: tissues, sterile gauze, sterile normal saline, dressing materials, the prescribed medications, and the patient's clinical record.

**STANDARDS**

Administer eye drops and ointments without contamination and without causing further injury to the patient. Observe the "five rights" of medication administration (the right drug, the right dose, the right patient, the right route, and the right time).

**TRAINING/EVALUATION***Training Information Outline*

1. Check the medication sheet (DA Form 4678) against the physician's orders. (Abbreviations commonly used in prescribing medications can be found in [Appendix A.](#))

- a. Name of the medication.
- b. Amount (dose) of medication.
- c. Route of administration.
- d. Time to be administered.

2. Select the medication.

a. Check the medication label three times to ensure that the correct medication is being prepared for administration.

- b. Check the expiration date of the medication.

*NOTE:* If unfamiliar with a medication, look it up to determine contraindications, precautions, and side effects.

3. Take the medication and other supplies to the patient's bedside.

4. Identify the patient and explain the procedure.

## STP 8-91B15-SM-TG

5. Position the patient.

- a. Supine in bed.
- b. Sitting, with the head supported.

*NOTE:* The head must be supported for stability if the patient is seated. Support may be provided by a head rest or a high-back chair.

6. Remove eye dressings, if present.

- a. Gently pull the dressing away from the forehead, and then pull it down and away from the eye area.
- b. Discard the contaminated dressing.
- c. Perform a patient care handwash.

7. Remove accumulation of secretions, if present.

- a. Apply sterile gauze moistened with sterile normal saline to the closed eyes to soften the secretions.
- b. Remove loosened secretions by blotting with additional moistened gauze.

8. Prepare the medication.

- a. Ointment tube.

(1) Remove the cap from the tube and place the cap on a piece of sterile gauze to prevent contamination.

(2) Squeeze a small amount of ointment onto a piece of sterile gauze to remove any crust that may have formed.

- (3) Discard this gauze.

- b. Eye dropper.

(1) Draw the prescribed amount of the medication into the dropper.

(2) Do not invert the dropper after withdrawing the solution.

- c. Squeeze vial.

(1) Remove the cap and place it on a piece of sterile gauze.

(2) Invert the vial.

9. Administer the medication.

- a. Instruct the patient to tilt the head back and look upward with the eyes open.
- b. Steady the hand holding the medication container against the patient's forehead.
- c. Place a finger on the skin below the lower eyelid and apply gentle, downward pressure to create a small conjunctival pocket.
- d. Instill the correct number of drops or amount of ointment into the conjunctival pocket.
- e. Apply ointment in a thin ribbon from the inner aspect to the outer aspect of the conjunctival pocket.
- f. Do not instill medication directly onto the eyeball.

10. Instruct the patient to close the eyes gently and "roll" them to distribute the medication.

*NOTE:* Instruct the patient not to squeeze the eyes tightly shut.

11. Remove any excess solution or ointment by blotting gently with a clean tissue or gauze square.

12. Apply fresh dressings or patches, if required.

*NOTE:* If a patient refuses a medication, offer it again in five minutes. If refused a second time, record the omission on DA Form 4678 and document the reason for the omission in the nursing notes.

13. Remove all equipment from the bedside.

**CAUTION**

Do not leave any medication at the patient's bedside without a specific physician's order.

14. Record the administration of all medications on the appropriate medical forms.

*NOTE:* Administration of all scheduled and nonscheduled (PRN) medication must be documented.

- a. Initial the medication sheet (DA Form 4678).
- b. Annotate the nursing notes when administering controlled drugs, nonscheduled (PRN) medications, and other medications as required by local policy.

(1) Name of the medication.

## STP 8-91B15-SM-TG

(2) Time the medication was administered.

(3) Reason for the medication.

15. Record the omission of a medication on the appropriate medical forms whenever a scheduled medication is not administered.

a. Annotate the medication sheet (DA Form 4678) by placing a circle in the initial block.

b. Annotate the nursing notes.

(1) Name of the medication.

(2) Time it should have been administered.

(3) Reason it was not administered.

(4) Follow-up action taken.

### *Evaluation Guide*

#### **Performance Measures**

#### **Results**

1. Check the medication sheet (DA Form 4678) against the physician's orders.	P	F
2. Select the medication.	P	F
3. Take the medication and other supplies to the patient's bedside.	P	F
4. Identify the patient and explain the procedure.	P	F
5. Position the patient.	P	F
6. Remove eye dressings, if present.	P	F
7. Remove accumulation of secretions, if present.	P	F
8. Prepare the medication.	P	F
9. Administer the medication.	P	F
10. Instruct the patient to close the eyes gently and "roll" them to distribute the medication.	P	F



Performance Measures	Results	
11. Remove any excess solution or ointment by blotting gently with a clean tissue or gauze square.	P	F
12. Apply fresh dressings or patches, if required.	P	F
13. Remove all equipment from the bedside.	P	F
14. Record the administration of all medications on the appropriate medical forms.	P	F
15. Record the omission of a medication on the appropriate medical forms whenever a scheduled medication is not administered.	P	F

**REFERENCES:** None

**081-833-3014**

**PERFORM A NEUROLOGICAL EXAMINATION ON A PATIENT WITH  
SUSPECTED CENTRAL NERVOUS SYSTEM (CNS) INJURIES**

**CONDITIONS**

You have a casualty with head and neck injuries. The vital signs have been taken. Necessary materials and equipment: a flashlight or penlight, a pin or sharp object, and a rubber hammer.

**STANDARDS**

Perform a neurological examination on a casualty with a suspected CNS injury without causing further injury to the casualty.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Look for the cause(s) of the injury.
  - a. Observe the casualty's position.
  - b. Observe the environmental conditions.

*NOTE:* If the casualty is unconscious, ask bystanders for information.

2. Evaluate the casualty's mental status.
  - a. Determine the level of consciousness.

(1) Alert--awake and responsive (verbal and motor). The casualty responds immediately, fully, and appropriately to commands.

(2) Lethargic--sleepy or drowsy. The casualty can be aroused and responds appropriately, but will fall asleep again as soon as he or she is left alone.

(3) Comatose--partial to complete unconsciousness. Use the Glasgow Coma Scale to determine the level of coma. (See task 081-835-3030.)

b. Ask the casualty to perform calculations (basic math) to assess cognition. For example, have the casualty count backward from 100 by threes or sevens.

c. Observe the casualty's verbal and nonverbal behavioral responses to evaluate affect (mood). For example:

- (1) Does the casualty laugh inappropriately?
- (2) Does the casualty display excessive or inappropriate anger, fear, anxiety, or confusion?
- (3) Does the casualty respond to stimuli in a normal manner?
- d. Question the casualty to evaluate long and short term memory.
  - (1) Discuss the casualty's past to evaluate remote recall (long term memory). Verify the casualty's responses with information on what company or unit he or she is assigned to and the company's mission or with the unit's members.
  - (2) Discuss current events to evaluate recent recall (short term memory). For example, ask the casualty what he or she was doing just before being injured, or what his or her unit was doing the previous day.
- e. Question the casualty to evaluate his or her orientation to person, place, and time.
  - (1) Ask the casualty to spell his or her name, name family or unit members, and recite his or her home or unit address. (This determines whether the patient knows who he or she is and who others are.)
  - (2) Ask the casualty to identify his or her location, naming the city, state, or country. (This determines whether the casualty knows where he or she is.)
  - (3) Ask the casualty to identify the year, month, and approximate time of day.
3. Evaluate the casualty's cerebellar functions.
  - a. Test coordination and balance.
    - (1) Ask the casualty to extend one arm, close the eyes, and touch the index finger to the nose.
    - (2) Ask the casualty to slap the palms of the hands on his or her legs, and then the backs of the hands on the legs, alternating in a rapid motion.
    - (3) Ask the casualty to stand relaxed with the eyes open. Watch for movement.
    - (4) Perform the "Romberg test."
      - (a) Have the casualty stand up and relax. Instruct the casualty to close his or her eyes.
      - (b) If the casualty cannot maintain balance when the eyes are closed, the test is positive.

*NOTE:* The medic should stand close to the casualty to support the casualty if he or she starts to fall.

## STP 8-91B15-SM-TG

- b. Check the casualty for normal gait and heel-toe-heel walking.
  - (1) Ask the casualty to walk a straight line both forward and backward.
  - (2) Observe the casualty for coordination, balance, and posture. Note inability to walk heel-toe-heel with one foot in front of the other.
- 4. Evaluate the casualty's motor function.
  - a. Check for mild weakness.
    - (1) Have the casualty stand with the arms outstretched, palms upward, and eyes closed for 20 to 30 seconds.
    - (2) Observe the casualty's arms for the "pronator sign" (the arm starts dropping and the hand turns over slightly).
  - b. Test muscle tone.
    - (1) Ask the casualty to relax.
    - (2) If the casualty is ambulatory, have him or her sit on the edge of the examining table. Watch the freedom of movement of the legs. This indicates tone.
    - (3) If the casualty is in bed, lift the casualty's arm, drop it, and observe the arm as it falls. Look for atrophy--loss of muscle tone or strength.
  - c. Test muscle strength.
    - (1) Ask the casualty to walk on his or her heels.
    - (2) Ask the casualty to walk on his or her toes.
    - (3) Extend your hands to the casualty, and ask the casualty to firmly grip and squeeze your hands. Note strength and equality of grip.
    - (4) Ask the casualty to alternately flex and extend the feet while providing resistance with your hands. Look for atrophy.
- 5. Evaluate the casualty's cranial nerve function.
  - a. Test pupillary reflexes.
    - (1) Dim the lighting and shine a light into one of the casualty's eyes.

- (2) Observe the pupillary response.
- (3) Repeat the procedure on the other eye.
- (4) If the pupils are unreactive or unequal, they are abnormal.
- (5) If the pupils are equal and reactive, record PERRLA (pupils equal round, and reactive to light and accommodation).

b. Test facial nerves.

- (1) Ask the casualty to smile and raise his or her eyebrows.
- (2) Look for weakness or drooping on either side of the face when smiling.
- (3) Look to see if there is even movement of both eyebrows.

6. Evaluate the casualty's sensory functions.

*NOTE:* When doing this test, ask the casualty not to watch what you are doing.

- a. Allow the casualty to assume a comfortable position with the eyes closed.
- b. Test perception of pain by using a safety pin. Lightly touch the skin with the sharp and dull areas of the pin.
  - (1) Ask the casualty to identify the sensation felt (sharp or dull).
  - (2) Ask the casualty to identify where the sensations were felt.
- c. Test perception of touch by using a cotton ball to lightly brush the skin, asking the casualty to tell you when and where he or she felt the sensation.

7. Check for the presence of a Babinski reflex.

- a. Grasp the ankle with your left hand.
- b. With a blunt point and moderate pressure, stroke the sole near its lateral border, from the heel toward the ball of the foot. The course of the stroke should curve to the middle to follow the bases of the toes.
- c. Normal reflex--toes curl. (Recorded as the absence of a Babinski reflex.)
- d. Abnormal reflex. (Recorded as the presence of a Babinski reflex.)

## STP 8-91B15-SM-TG

- (1) Dorsiflexion of the great toe.
- (2) Fanning of all the toes.
- (3) Dorsiflexion of the ankle.
- (4) Flexion of the knee and hip.

### 8. Evaluate the casualty's deep tendon reflexes (DTRs).

#### a. Biceps.

- (1) Position the elbow at about a 90° angle of flexion with the arm slightly pronated.
- (2) Grasp the elbow with your left hand so the fingers are behind it and your abducted thumb presses the biceps brachii tendon.
- (3) Strike your thumb a series of blows with the rubber hammer, varying your thumb pressure with each blow until the most satisfactory response is obtained.
- (4) A normal response will be elbow flexion.

#### b. Triceps.

- (1) Grasp the casualty's wrist with your left hand and pull the arm across the chest so the elbow is flexed about 90° and the forearm is partially pronated.
- (2) Tap the triceps brachii tendon directly above the olecranon process.
- (3) A normal response is elbow extension.

#### c. Knee.

- (1) Legs dangling.
  - (a) Have the casualty sit on a table, high bed, or litter to permit free swinging of the legs.
  - (b) Tap the patellar tendon directly.

*NOTE:* The tendon is distal to the patella.

- (c) A normal response is extension of the knee.
- (2) Lying supine.

- (a) With your hand under the popliteal fossa, lift the knee from the table.
  - (b) Tap the patellar tendon directly.
  - (c) A normal response is extension.
- d. Ankle.
- (1) Legs dangling.
    - (a) With your left hand, grasp the foot and pull it in dorsiflexion. Find the degree of stretching of the Achilles tendon that produces the optimal response.
    - (b) Tap the Achilles tendon directly.
    - (c) A normal response is contraction of the gastrocnemius and plantar flexion of the foot.
  - (2) Lying supine.
    - (a) Partially flex the hip and knee. Rotate the knee outward as far as comfort permits.
    - (b) With your left hand, grasp the foot and pull it in dorsiflexion.
    - (c) Tap the Achilles tendon directly.
    - (d) A normal response is plantar flexion.

### *Evaluation Guide*

Performance Measures	Results	
1. Look for the cause(s) of the injury.	P	F
2. Evaluate the casualty's mental status.	P	F
3. Evaluate the casualty's cerebellar functions.	P	F
4. Evaluate the casualty's motor function.	P	F
5. Evaluate the casualty's cranial nerve functions.	P	F
6. Evaluate the casualty's sensory functions.	P	F
7. Check for the presence of a Babinski reflex.	P	F

## **STP 8-91B15-SM-TG**

### **Performance Measures**

8. Evaluate the casualty's deep tendon reflexes.

### **Results**

P      F

**REFERENCES:** None



081-835-3030

**DETERMINE A PATIENT'S LEVEL OF CONSCIOUSNESS  
USING THE GLASGOW COMA SCALE**

**CONDITIONS**

You have a patient who is in an altered state of consciousness. Necessary materials and equipment: the patient's clinical record, stethoscope, blood pressure cuff, and a watch with a second hand.

**STANDARDS**

Accurately determine and record a patient's level of consciousness in accordance with the standardized response scale.

**TRAINING/EVALUATION**

*Training Information Outline*

1. Determine best eye response in accordance with the following response grading scale.
  - a. Eyes open spontaneously--four points.
  - b. Eyes open in response to speech--three points.
  - c. Eyes open in response to painful stimuli--one point.
2. Determine best verbal response in accordance with the following response grading scale.
  - a. The patient is oriented to person, place, and time--five points.
  - b. The patient is not oriented (is confused), but is able to communicate--four points.
  - c. The patient speaks in a disorganized manner (inappropriate speech)--three points.
  - d. The patient responds with moaning or groaning sounds (incomprehensible sounds)--two points.
  - e. The patient has no verbal response--one point.
3. Determine best motor response in accordance with the following response grading scale.
  - a. The patient obeys commands appropriately and is able to move all extremities equally and spontaneously--six points.

## **STP 8-91B15-SM-TG**

- b. The patient is still able to obey commands but exhibits weakness (for example, drifting of an upper extremity)--five points.
  - c. The patient attempts to withdraw from the source of the painful stimulus (flexor withdrawal)--four points.
  - d. The patient flexes an extremity abnormally --three points.
  - e. The patient extends an extremity abnormally --two points.
  - f. The patient has no motor response to painful stimuli (flaccid)--one point.
- 4. Determine the total consciousness level score by adding the points determined in steps 1 through 3. (See Figure 3-60.)
  - 5. Record and/or graph the patient's response.
  - 6. Report any changes in LOC to the charge nurse immediately.
  - 7. Document significant nursing observations on the appropriate forms IAW local SOP.

<b>ABBREVIATED RESPONSE SCALE</b>		
<b>EYE OPENING</b>		<b>Eye Score</b>
Spontaneous	=4	
To sound	=3	
To pain	=2	
None	=1	
<b>BEST VERBAL RESPONSE</b>		<b>Verbal Score</b>
Oriented	=5	
Not Oriented (confused)	=4	
Inappropriate speech	=3	
Incomprehensible sounds	=2	
None	=1	
<b>BEST MOTOR RESPONSE</b>		<b>Motor Score</b>
Obeys commands	=6	
Localizes stimulus	=5	
Withdrawal from stimulus	=4	
Abnormal flexion	=3	
Abnormal extension	=2	
Flaccid	=1	
		<b>TOTAL SCORE</b>
<p>The patient's total "consciousness level" score will be a minimum of 3 points and a maximum of 15 points.</p>		

Figure 3-60

***Evaluation Guide***

<b>Performance Measures</b>	<b>Results</b>	
1. Determine best eye response.	P	F
2. Determine best verbal response.	P	F
3. Determine best motor response.	P	F
4. Determine the total consciousness level score by adding the points determined in steps 1 through 3.	P	F
5. Record and/or graph the patient's response.	P	F
6. Report any changes in LOC to the charge nurse immediately	P	F
7. Document significant nursing observations on the appropriate forms IAW local SOP.	P	F

**REFERENCES:** None

**APPENDIX A****DRUG DOSAGE CALCULATIONS****Calculate Intravenous Drip Rates**

1. To calculate the drip rate per minute (flow rate) of intravenous (IV) fluids, first obtain the following information:

a. Delivery rate (drops per cc) of the IV tubing set being used. This is also referred to as the "tubing factor." (The IV tubing package will state the rate of delivery for that particular IV set; for example, 10 drops per cc for standard drip tubing or 60 drops per cc for mini drip tubing.)

b. Volume of fluid (in cc) to be infused. (This can be expressed in an hourly amount or in a total volume; for example, "100 cc/hour" or "2 liters over 6 hours.")

c. Amount of time (in minutes) the fluid is to be infused. (This can be expressed in an hourly rate or total time; for example, "150 cc per hour" or "infuse 1 liter over 4 hours.")

2. Calculate the flow rate in drops per minute using the following formula:

$\text{gtt/min} = \frac{\text{volume to be infused X gtt/cc of administration set}}{\text{infusion time in minutes}}$
---

1. To convert grams (Gm) to milligrams (mg), multiply Gm by 1000 and move the decimal point three places to the right; for example, 0.075 Gm = 75 mg and 0.25 Gm = 250 mg.

2. To convert milligrams to grams, divide milligrams by 1000 and move the decimal point three places to the left; for example, 1000 mg = 1 Gm and 500 mg = .5 Gm.

## STP 8-91B15-SM-TG

### Calculation of Doses from Drugs in Solution

1. Some drugs are dispensed as solutions. The strength of the solution is written on the label of the drug container; for example, "10 mg per ml." The problem is to determine what quantity of solution will contain the required dose of the drug. The method of solving the problem is by ratio and proportion. The formula is as follows:

Required	:	Unknown	::	ratio of strength
amount of drug		amount of solution		of solution on hand
_____	is to	_____	as	_____ is to _____

2. EXAMPLE: The physician has ordered Benadryl Elixir, 25 mg p.o. The Benadryl Elixir on hand contains 10 mg per ml. How many ml (cc) of the Elixir must be administered to achieve the required dose?

a. Write out the formula.

$$25 \text{ mg} : x \text{ ml} :: 10 \text{ mg} : 1 \text{ ml}$$

b. Multiply the inner values.

$$x \text{ times } 10 (10x)$$

c. Multiply the outer values.

$$25 \text{ times } 1 (25)$$

d. The multiplied inner values equal the multiplied outer values, so:

$$10x = 25$$

e. Divide 25 by 10 to find x.

$$x = \frac{25}{10} \text{ or } 2.5$$

f. 2.5 ml of Benadryl Elixir must be administered to achieve the required dose of 25 mg.

### Convert from Apothecary to Metric

1. To convert grains to milligrams, multiply grains by 60 to obtain milligrams; for example,  $\frac{1}{4}$  grain = 15 milligrams.

2. To convert milligrams to grains, divide milligrams by 60 to obtain grains; for example, 30 mg =  $\frac{1}{2}$  grain.

Liquid Measure		Liquid Measure	
Metric	Approximate Apothecary Equivalents	Metric	Approximate Apothecary Equivalents
1,000 ml	1 quart	3 ml	45 minims
750 ml	1 1/2 pints	2 ml	30 minims
500 ml	1 pint	1 ml	15 minims
250 ml	8 fluid ounces	0.75 ml	12 minims
200 ml	7 fluid ounces	0.6 ml	10 minims
100 ml	3 1/2 fluid ounces	0.5 ml	8 minims
50 ml	1 3/4 fluid ounces	0.3 ml	5 minims
30 ml	1 fluid ounce	0.25 ml	4 minims
15 ml	4 fluid drams	0.2 ml	3 minims
10 ml	2 1/2 fluid drams	0.1 ml	1 1/2 minims
8 ml	2 fluid drams	0.06 ml	1 minim
5 ml	1 1/4 fluid drams	0.05 ml	3/4 minim
4 ml	1 fluid dram	0.03 ml	1/2 minim
Weight		Weight	
Metric	Approximate Apothecary Equivalents	Metric	Approximate Apothecary Equivalents
30 Gm	1 ounce	30 mg	1/2 grain
15 Gm	4 drams	25 mg	3/8 grain
10 Gm	2 1/2 drams	20 mg	1/3 grain
7.5 Gm	2 drams	15 mg	1/4 grain
6 Gm	90 grains	12 mg	1/5 grain
5 Gm	75 grains	10 mg	1/6 grain
4 Gm	60 grains/1 dram	8 mg	1/8 grain
3 Gm	45 grains	6 mg	1/10 grain
2 Gm	30 grains/1/2 dram	5 mg	1/12 grain
1.5 Gm	22 grains	4 mg	1/15 grain
1 Gm	15 grains	3 mg	1/20 grain
0.75 Gm	12 grains	2 mg	1/30 grain
0.6 Gm	10 grains	1.5 mg	1/40 grain
0.5 Gm	7 1/2 grains	1.2 mg	1/50 grain
0.4 Gm	6 grains	1 mg	1/60 grain
0.3 Gm	5 grains	0.8 mg	1/80 grain
0.25 Gm	4 grains	0.6 mg	1/100 grain
0.2 Gm	3 grains	0.5 mg	1/120 grain
0.15 Gm	2 1/2 grains	0.4 mg	1/150 grain
0.12 Gm	2 grains	0.3 mg	1/200 grain
0.1 Gm	1 1/2 grains	0.25 mg	1/250 grain
75 mg	1 1/4 grains	0.2 mg	1/300 grain
60 mg	1 grain	0.15 mg	1/400 grain
50 mg	3/4 grain	0.12 mg	1/500 grain
40 mg	2/3 grain	0.1 mg	1/600 grain

## ABBREVIATIONS

ac	before meals
ad lib	as much as desired
bid	twice a day
c	with
cc	cubic centimeter
caps	capsule
Gm	gram
gr	grain
gtt	drop
h	hour
hs	bedtime (hour of sleep)
kg	kilogram
l	liter
mg	milligram
ml	milliliter
od	right eye (oculo dextro)
os	left eye (oculo sinistro)
ou	both eyes (oculus uterque)
pc	after meals
po	by mouth
prn	when needed/as necessary
qd	every day (daily)
qid	four times daily
qod	every other day
qs	in sufficient quantity
q2h	every 2 hours
q4h	every 4 hours
q6h	every 6 hours
q8h	every 8 hours
s	without
stat	at once/immediately
sq or sc	subcutaneously
ss	one half
tab	tablet
tsp	teaspoon
tbsp	tablespoon
tid	three times daily



## GLOSSARY

### SECTION I

#### DEFINITION OF TERMS

Army Training and Evaluation Program (ARTEP). The Army's collective training program that establishes unit training objectives critical to unit survival and performance in combat. It combines the training and the evaluation process into one integrated function. The ARTEP is a training program and not a test. The sole purpose of external evaluation under this program is to diagnose unit requirements for future training.

Battle focus. A process to guide the planning, execution, and assessment of the organization's training program to ensure soldiers train as they are going to fight.

Collective training. Training, either in institutions or units, that prepares cohesive teams and units to accomplish their combined arms and service missions on the battlefield.

Common task. A critical task that is performed by every soldier in a specific skill level regardless of MOS.

Critical task. A collective or individual task determined to be essential to wartime mission, duty accomplishment, or survivability. Critical individual tasks are trained in the training base and/or unit, and they are reinforced in the unit.

Cross training. The systematic training of a soldier on tasks related to another duty position within the same military occupational specialty or tasks related to a secondary military occupational specialty at the same skill level.

Drill. A disciplined, repetitious exercise to teach and perfect a skill or procedure; for example, a fire, man overboard, abandon ship, lifeboat, and damage control drills on Army watercraft.

Individual training. Training which prepares the soldier to perform specified duties or tasks related to the assigned duty position or subsequent duty positions and skill levels.

Integration training. The completion of initial entry training in skill level 1 tasks for an individual newly arrived in a unit, but limited specifically to tasks associated with the mission, organization, and equipment of the unit to which the individual is assigned. It may be conducted by the unit using training materials supplied by the school, by troop schools, or by inservice or contracted mobile training teams. In all cases, this training is supported by the school proponent.

Merger training. Training that prepares noncommissioned officers to supervise one or more different military occupational specialties at lower skill levels when they advance to a higher skill level in their career management field.

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Mission essential task list. A compilation of collective mission essential tasks which must be successfully performed if an organization is to accomplish its wartime mission(s).

Self-development. Self-development is a planned, progressive, and sequential program followed by leaders to enhance and sustain their military competencies. Self-development consists of individual study, research, professional reading, practice, and self-assessment.

Sustainment training. The provision of training to maintain the minimum acceptable level of proficiency required to accomplish a critical task.

Train-up. The process of increasing the skills and knowledge of an individual to a higher skill level in the appropriate MOS. It may involve certification.

Unit training. Training (individual, collective, and joint or combined) conducted in a unit.

## **SECTION II**

### **ACRONYMS AND ABBREVIATIONS**

ABD	abdominal
ACCP	Army Correspondence Course Program
ARTEP	Army Training and Evaluation Program
AMPLE	allergies, medications being taken, past history of illness/and or diseases, last meal or drink, and events preceding the injury and/or illness
AVPU	alertness, responsiveness to vocal stimuli, responsiveness to painful stimuli, unresponsiveness
BSA	body surface area
BVM	bag-valve-mask
CAM	chemical agent monitor
cc	cubic centimeter
cc/hr	cubic centimeters of fluid per hour
cc/min	cubic centimeters of fluid per minute
cm	centimeter

CMS	Centralized Materiel Service/Section
CNS	central nervous system
CPR	cardiopulmonary resuscitation
CSF	cerebrospinal fluid
CTT	common task test
DCS	division clearing station
D <sub>5</sub> W	5% dextrose in water
DTR	deep tendon reflex
EGTA	esophageal gastric tube airway
EOA	esophageal obturator airway
EMD	electromechanical disassociation
ET	endotracheal tube
F	Fahrenheit
gtts/cc	drops per cubic centimeter
HD	mustard gas
HTH	high test hypochlorite
IAW	in accordance with
ID	identification
IM	intramuscular
ITEP	Individual Training Evaluation Program
IV	intravenous
kg	kilogram
KVO	keep the vein open

## **STP 8-91B15-SM-TG**

L	Lewisite
lb	pound
L/M	liters per minute
LZ	landing zone
MEDEVAC	medical evacuation
MES	medical equipment set
mg	milligram
min	minute
ml	milliliter
mm Hg	millimeters of mercury
MOPP	mission-oriented protective posture
MOS	military occupational specialty
MOSC	military occupational specialty code
MTF	medical treatment facility
MTP	MOS training plan
MVA	motor vehicle accident
NBC	nuclear, biological, chemical
NCO	noncommissioned officer
PPW	patient protective wrap
psi	pounds per square inch
RTO	radio/telephone operator
SL	skill level

SM	solder's manual
SMCT	soldier's manual of common tasks
SOP	standing operating procedure
SQ	subcutaneous
STAT	immediately
STB	supertropical bleach
TG	trainer's guide
TKO	to keep open
WP	white phosphorus

## REFERENCES

New reference material is being published all the time. Present references, as listed below, may become obsolete. To keep up-to-date, see the DA Pam 25-30 (FICHE) publications and Extension Training Materials (ETM) catalog, DA Pam 350-100. If referenced documents are not available through your unit, borrow them from your post learning center or library.

### *Required References*

None

### *Related References*

#### **Army Training and Evaluation Programs (ARTEP)**

8-057-30-MTP	Mission Training Plan for the Medical Company, Main Support Battalion, Heavy Division
8-058-30-MTP	Mission Training Plan for the Medical Company, Forward Support Battalion, Support Command, Heavy Division
8-437-30-MTP	Mission Training Plan for the Medical Company, Support Battalion, Heavy Separate Brigade/Separate Infantry Brigade, and Medical Troop, Support Squadron, Armored Cavalry Regiment
8-446-30-MTP	Mission Training Plan for the Headquarters Detachment, Medical Evacuation Battalion
8-449-30-MTP	Mission Training Plan for the Medical Company Ground Ambulance
8-456-30-MTP	Mission Training Plan for the Support Company, Area Support Medical Battalion
8-457-30-MTP	Mission Training Plan for the Area Support Medical Company
8-458-30-MTP	Mission Training Plan for the Medical Company (Holding)
8-705-MTP	Mission Training Plan for the Combat Support Hospital
8-715-MTP	Mission Training Plan for the Field Hospital
8-765-30-MTP	Mission Training Plan for the Mobile Army Surgical Hospital

#### **Department of the Army Pamphlets (DA Pam)**

DA Pam 351-20	Army Correspondence Course Program Catalog
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## **STP 8-91B15-SM-TG**

### **Field Manuals (FM)**

FM 7-8(HTF)	The Infantry Platoon and Squad (Infantry, Airborne, Air Assault, Ranger) (How to Fight)
FM 8-230	Medical Specialist
FM 21-60	Visual Signals
FM 25-4	How to Conduct Training Exercises
FM 25-5	Training for Mobilization and War
FM 25-100	Training the Force
FM 25-101	Battle Focused Training
FM 57-38	Pathfinder Operations

### **Soldier Training Publications (STP)**

STP 21-1-SMCT	Soldier's Manual of Common Tasks (Skill Level 1)
STP 21-24-SMCT	Soldier's Manual of Common Tasks (Skill Levels 2, 3, and 4)

### **DA Forms**

DA Form 2028	Recommended Changes to Publications and Blank Forms
DA Form 3949	Controlled Substances Record
DA Form 4678	Therapeutic Documentation Care Plan (Medication)
DA Form 5164-R	Hands-On Evaluation
DA Form 5165-R	Field Expedient Squad Book

### **DD Forms**

DD Form 792	Twenty-Four Hour Patient Intake and Output Worksheet
DD Form 1380	U.S. Field Medical Card

### **Standard Forms (SF)**

SF 511	Medical Record--Vital Signs Record
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**STP 8-91B15-SM-TG**  
**3 OCTOBER 1995**

By Order of the Secretary of the Army:

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